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Ontario. Legislative Assembly

SESSIONAL PAPERS.

VOL. XXX.—PART VIII.

FOURTH SESSION, EIGHTH LEGISLATURE

OF THE

PROVINCE OF ONTARIO.

SESSION 1897-8.

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ARRANGED ALPHABETICALLY.

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No. 2.. Public Accounts of the Province for the year 1897. Presented to the Legislature 8th December, 1897, and 10th January, 1898. *Printed,*

No. 3... Estimates for the year 1898. Presented to the Legislature 10th December, 1897. *Printed.* Estimates (supplementary) for the year 1898. Presented to the Legislature 12th January, 1898. *Printed.* Estimates (vote of credit). Presented to the Legislature 20th December, 1897. *Not Printed.*

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No. 4.. Report of the Commissioner of Crown Lands for the year 1897. Presented to the Legislature 13th January, 1898. *Printed.*

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No. 6.. Report of the Inspector of Division Courts for the year 1897. Presented to the Legislature 12th January, 1898. *Printed.*

No. 7.. Report on the working of the Tavern and Shop Licenses Acts for the year 1897. Presented to the Legislature 12th January, 1898. *Printed.*

No. 8... Report of the Commissioner of Public Works for the year 1897. Presented to the Legislature 12th January 1898. *Printed.*

No. 9.. Report of the Inspector of Insurance and Registrar of Friendly Societies for the year 1897. Presented to the Legislature 9th December, 1897. *Printed.*

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No. 11.. Report upon the Common Goals, Prisons and Reformatories of the Province for the year ending 30th September, 1897. Presented to the Legislature 12th January, 1898. *Printed.*

No. 12.. Report upon the Houses of Refuge and Orphan and Magdalen Asylums of the Province for the year ending 30th September, 1897. Presented to the Legislature 12th January, 1898. *Printed.*

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No. 13.. Report upon the Hospitals of the Province for the year ending 30th September, 1897. Presented to the Legislature 12th January, 1898. *Printed.*

No. 14.. Report upon the Institution for the Education of the Blind, Brantford, for the year ending 30th September, 1897. Presented to the Legislature 9th December, 1897.

No. 15.. Report upon the Institution for the Education of the Deaf and Dumb, Belleville, for the year ending 30th September, 1897. Presented to the Legislature 9th December, 1897. *Printed.*

No. 16.. Report of the Work under the Children's Protection Act for the year 1897. Presented to the Legislature 13th January, 1898. *Printed.*

No. 17.. Report of the Ontario Agricultural College and Experimental Farm for the year 1897. Presented to the Legislature 10th January, 1898. *Printed.*

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No. 18.. Report of the Fruit Growers' Association of Ontario for the year 1897. Presented to the Legislature 10th January, 1898. *Printed.*

No. 19.. Report of the Fruit Experiment Stations of Ontario for the year 1897. Presented to the Legislature 10th January, 1898. *Printed.*

No. 20.. Report of the Entomological Society of Ontario for the year 1897. Presented to the Legislature 10th January, 1898. *Printed.*

No. 21.. Report of the Bee Keepers' Association for the Province for the year 1897. Presented to the Legislature 10th January, 1898. *Printed.*

No. 22.. Report of the Poultry and Pet Stock Associations of the Province for the year 1897. Presented to the Legislature 10th January, 1898. *Printed.*

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No. 24.. Report of the Butter and Cheese Associations of the Province for the year 1897. Presented to the Legislature 10th January, 1898. *Printed.*

No. 25.. Report of the Live Stock Associations of the Province for the year 1897 Presented to the Legislature 10th January, 1898. *Printed.*

No. 26.. Report of the Superintendent of Farmers' Institutes of the Province for the year 1897. Presented to the Legislature 10th January, 1898. *Printed.*

No. 27.. Report of the Inspectors of Factories for the Province for the year 1897. Presented to the Legislature 10th January, 1898. *Printed.*

No. 28.. Report of the Inspector of Legal Offices for the year 1897. Presented to the Legislature 12th January, 1898. *Printed.*

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No. 30.. Report of the Ontario Game and Fish Commission. Presented to the Legislature 10th January, 1898. *Printed.*

No. 31.. Report of the Commissioners for the Queen Victoria Niagara Falls Park for the year 1897. Presented to the Legislature 14th January, 1898. *Printed.*

No. 32.. Report of the Bureau of Industries for the year 1897. Presented to the Legislature 10th January, 1898. *Printed.*

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No. 35.. Report of the Board of Health for the year 1897. Presented to the Legislature 10th January, 1898. *Printed.*

No. 36.. Report of the Financial Statements made by Loan Corporations for the year 1897. Presented to the Legislature 10th January. 1898. *Printed.*

No. 37.. Report of Standing Committee on Finance, Toronto University, for the year 1897-98. Presented to the Legislature 20th December, 1897. *Printed.*

No. 38.. Auditor's Report on Capital and Income Accounts, Toronto University for the year ending 30th June, 1897. Presented to the Legislature 9th December, 1897. *Printed.*

No. 39.. Copy of an Order in Council directing the payment out of the Surplus Surrogate fees of $500 to His Honour Judge Mosgrove. Presented to the Legislature 9th December, 1897. *Not Printed.*

No. 40.. Reports of the Principal, and Statements of Bursar of Upper Canada College, shewing receipts and expenditures 1896-97. Presented to the Legislature 16th December, 1897. *Not Printed.*

No. 41.. Return to an Order of the House of the 13th day of December, 1897, for a Return shewing the value of the hogs which died, or were slaughtered at the Humber piggery during the outbreak of cholera in July, 1896. Presented to the Legislature 16th December, 1897. Mr. *St. John.* *Not Printed.*

No. 42.. Report of the Commissioners appointed to revise and consolidate the Public Statutes of the Province. Presented to the Legislature 23rd December. 1897. *Not Printed.*

No. 43.. Report of the Provincial Municipal Auditor for the year ending 30th November, 1897. Presented to Legislature 28th December, 1897. *Printed.*

No. 44.. Return to an Order of the House of the thirty-first day of March, 1897, for a Return shewing the expenditure on Colonization Roads, Bridges and other Roads in the Province for the last five years, shewing in each case the Electoral District or Districts in which each of the said Colonization Roads, Bridges and other Roads was situated. Presented to the Legislature 30th December, 1897. Mr. *Little.* *Not printed.*

No. 45.. Report of the Forestry Commissioners, Preliminary. Presented to the Legislature 4th January, 1898. *Printed.*

No. 46.. Return to an Address to His Honour the Lieutenant-Governor of the seventeenth day of December, 1897, praying that he will cause to be laid before the House a copy of the Petition presented to the Lieutenant-Governor in Council asking for an Audit of the Books, Vouchers, etc, of the Township of Manvers. A copy of the Commissioner's original report, together with his supplementary report. Also copies of all correspondence in connection with the matter. Presented to the Legislature 6th January, 1898. Mr. *Willoughby.* *Not printed.*

No. 47.. Return to an Order of the House of the thirteenth day of December, 1897, for a Return of copies of all correspondence, papers and documents between the Government, or any Department thereof, and all parties who have made application for mining concessions of a similar nature to those now enjoyed by the Engledue Syndicate under agreement with the Government; or any other concessions not now provided for by or within the provisions of the present Mining Act. Presented to the Legislature 6th January, 1898. Mr. *St. John.* *Not printed.*

No. 48.. Return to an Order of the House of the twenty-second day of December, 1997, for a copy of the Agreement entered into between the Commissioners of the Queen Victoria Niagara Falls Park and the Niagara Falls Electric Railway Company and the Canadian Niagara Power Company for the use of the surplus power of the said Railway Company in the generation of electricity. Presented to the Legislature 6th January, 1898. Mr. *German.* *Not printed.*

No. 49.. Report of the Superintendent of Spraying, Ontario, for the year 1897 Presented to the Legislature 10th January, 1898. *Printed.*

No. 50.. Copy of an Order in Council amending the Regulations respecting the shooting and taking of wild duck and other water fowl in the waters within two miles of Rondeau Provincial Park in Rondeau Harbor. Presented to the Legislature 11th January, 1898. *Not printed.*

No. 51.. Copy of an Order in Council respecting the sale of watches, jewellery or other goods of a like kind in Algonquin National Park. Presented to the Legislature 11th January, 1898. *Not printed.*

No. 52.. Report of the Agricultural and Experimental Union for the year 1897. Presented to the Legislature 12th January, 1898. *Printed.*

No. 53.. Return to an Order of the House of the twenty-second day of December last for a Return of copies of papers, documents and all correspondence between any member or officer of the Government and any other person or persons in reference to Lot No. 13, Concession 3, Township of Stisted. Presented to the Legislature 12th January, 1898. Mr. *Langford.* *Not printed.*

No. 54.. Return to an Order of the House of the twenty-ninth day of December last for a return of copies of all correspondence between the Commissioner of Crown Lands, or any official of the Department, and any person or persons in reference to the cutting of timber under license or trespass in the tract of land known as "Coffin" Addition. Presented to the Legislature 12th January, 1898. Mr. *Miscampbell.* *Not printed.*

No. 55.. Return to an Order of the House of the sixth day of January, 1898, for a Return shewing all payments made to Captain John Sullivan, an *employee* of the Government since January 1st, 1897, and shewing the time list since that date, where he was employed and amount received since that time. Such Return to state if paid by month, year, fees or day wages. Presented to the Legislature 12th January, 1898. Mr. *Reid* (Addington). *Not printed.*

No. 56.. Report of the Secretary and Registrar of the Province for the year 1897. Presented to the Legislature, 12th January, 1898. *Printed.*

No. 57.. Return of all Fees and Emoluments received by the Registrars of Deeds of the Province for the year 1897. Presented to the Legislature, 12th January, 1898. *Printed.*

No. 58.. Documents *re* the Manufacture, in Canada, of Pine Timber cut on the Crown Domain. Presented to the Legislature, 12th January, 1898. *Printed*

No. 59.. Return to an Order of the House of the twenty-second day of December last for a Return of copies of all papers, documents and correspondence between the Government, or any Department thereof, and any other person, persons or corporations in any way relating to the dealings of the Moore Lumber Company with the Crown Lands Department or with the Government; together with a full return of copies of the evidence taken at the investigation of the said Company's dealings with the Government, or any Department thereof, and of all other documents and correspondence in connection therewith, as well as a copy of the report and finding of the Commissioners appointed to investigate the same. Presented to the Legislature, 12th January, 1898. Mr. *St. John*. *Not printed.*

No. 69.. Report on the Immigration of British Children. Presented to the Legislature, 13th January, 1898 *Printed.*

No. 61.. Account of the Official Guardian *ad litem*, for the year 1897. Presented to the Legislature, 13th January, 1898. *Not printed.*

No. 62.. Return of an Order of the House of the thirty-first day of March, 1897, for a Return shewing how many acres of land are contained in the "Farm Proper" at the Ontario Agricultural College, and how many horses, cattle, sheep and pigs were kept on the farm in the year 1896. Shewing as well, if the farm produced sufficient food or fodder to maintain the stock for the whole year And shewing how much it cost, over and above what was raised on the farm, to maintain the stock for the year. Presented to the Legislature, 13th January, 1898. Mr. *Haggerty*. *Not printed.*

No. 63.. Return to an Order of the House of the eighth day of March, 1897, for a Return shewing the business done during each of the years 1892, 1893, 1894, 1895 and 1896 in the following Court in this Province, namely:—1. The High Court of Justice: (1) The number of writs issued out of the High Court of Justice in each of the above years; (2) The number of Records entered for trial of the said years; (3) The number of cases set down for appeal to the Divisional Courts of the High Court in each of the above years; (4) The number of cases set down for appeal to the Court of Appeal for each of the above years: (5) The number of cases appealed to the Supreme Court at Ottawa for each of the above years. 2. The County Courts: (1) The number of writs issued out of the County Courts of the Counties of the Province in each of the above years; (2) The number of Records entered for trial in the County Courts of this Province in each of the above years: (3) The number of County Court cases set down for appeal from the said County Courts to the Court of Appeal in each of the above years. 3. The Division Courts: (1) The Number of writs issued in the Division Courts of this Province in each of the said years; (2) The number of cases tried in the Courts in each of the said years; (3) The number of appeals taken from the Division Courts to a higher Court in each of the above years: (4) The number of Judgments by default entered during each of the above years in the Division Courts. Presented to the Legislature, 13th January, 1898. Mr. *Marter. Not printed.*

No. 64.. Report of the Commission appointed to enquire into the matter relative to the price of School Books, etc. Presented to the Legislature, 14th January, 1889. *Printed.*

No. 65.. Return to an Order of the House of the twenty-fourth day of March, 1897, for a return shewing the cost of, or purchase money paid for the Ontario Agricultural College; acreage of the property, together with the amount of land now under cultivation; expenditure thereon, since its establishment, upon buildings, stock, fencing, drainage and all other accounts. Together with receipts from students in fees, sale of stock, produce and other sources. Presented to the Legislature, 14th January, 1898. Mr. *Willoughby. Printed.*

No. 66.. Return to an Order of the House of the fourteenth day of January, 1898, for a Return of copies of all correspondence or reports in the possession of the Government respecting the operations of the Engeldue Syndicate during the past season on the locations or concessions granted at the beginning of the year. Presented to the Legislature, 14th January, 1898. Mr. *Dickenson. Printed.*

REPORT OF

THE BUREAU OF MINES

VOLUME VII FIRST PART

1898

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Seventh Report of

The Bureau of Mines

FIRST PART

To the Honorable JOHN M. GIBSON, Commissioner of Crown Lands :

SIR,—In compliance with your direction of three months ago to procure early publication of the mineral statistics of the Province, and with the approval of the Chairman of the Printing Committee of the Legislative Assembly, I have the honor to submit now for immediate publication Part I of the Seventh Report of the Bureau of Mines, embracing (1) the Statistics of Mining Lands and Minerals for the calendar year 1897, (2) the Report by Inspector Bow on the Mines of Northwestern Ontario, (3) the Report by Inspector Slaght on the Mines of Eastern Ontario, and (4) the Report by Inspector Boyd on the Michipicoton Mining Division. The Reports by Prof. Coleman of the School of Practical Science on the geology of the Goldfields of Northern Ontario, by Prof. Willmott of McMaster University on the Michipicoton Mining Division, by Mr. W. G. Miller of the Kingston School of Mining on the Corundum belts in Hastings, Renfrew and Peterborough, and by Mr. William A. Parks of Toronto University on the topography and geology of the base and meridian lines surveyed last year in the Rainy River district between the line of the Canadian Pacific Railway and Lac Seul, will be published in successive Parts as soon as the manuscripts and accompanying maps are ready. Statistics of mineral production will also be published quarterly or at shorter intervals during the year in accordance with your instructions.

I have the honor to be sir,

Your Obedient Servant,

ARCHIBALD BLUE,

Director.

OFFICE OF THE BUREAU OF MINES,

Toronto, 10 March, 1898.

REPORT OF THE BUREAU OF MINES

VOL VII 1898 PART I

Introduction

NO BETTER evidence can be given of increased activity in mining enterprise in the Province than is afforded by the grants of mineral lands by the Crown and the charters issued to mining companies during the year 1897. The total number of locations sold and leased in the year was 1,255, embracing an area of 115,809 acres, whereas for the five years 1892-96 the number sold and leased was 1,026, with an area of 93,821 acres. The revenue derived by the Crown last year from sales and rentals was $144,299, whereas for the preceding five years it was only $131,518. Adding the rentals of lands previously leased, the aggregate revenue of the five years was $146,959, while for 1897 it was $150,540, or, if the revenue from mining licenses be included, the aggregate for 1897 was $153,561. Equally significant was the activity shown in the incorporation of mining companies, as the following table of number of companies chartered with amount of their authorized capital for each year since Confederation will show :

Year.	No.	Capital.
1868	6	$658,500
1870	1	100,000
1871	1	40,000
1873	2	550,000
1874	3	1,800,000
1875	12	8,290,000
1876	1	800,000
1879	1	100,000
1880	4	480,000
1881	1	250,000
1882	8	4,552,880
1883	7	1,710,000
1884	3	2,750 000
1885	2	1,600,000
1886	3	1,060,000
1887	2	5,250,000
1888	10	1,368,000
1889	5	3,570,000
1890	14	2,7[illegible]5,000
1891	12	2,723,000
1892	14	4,025,000
1893	1	300,000
1894	5	2,135,000
1895	2	62,000
1896	26	15,600,000
1897	140	101,531,000

In four years of the thirty no charters were issued to mining companies, and the total number issued down to the end of 1897 has been 286, with an aggregate authorized capital of $164,060,380. To the end of 1896 there were issued 146 charters, with a total capital of $62,529,380, one-fourth of which is held by the 26 companies organized in the latter year. In 1897 the number of companies incorporated was only six less than in the preceding 29 years, but in amount of authorized capital they exceed all companies formed in the 29 years by $48,000,000. Of course every company that has secured a charter is not likely to become a working company, but out of so large a number there are no doubt many that will proceed to make investments of their capital both in the acquisition and the development of properties and the next year or two ought to show a large increase in the mineral productions of the Province.

There is room for large development in the mineral industries of the Province. Not only does the varied list include all of the principal and more commonly found metals, such as iron, copper, lead, silver and gold, but it also embraces the comparatively rare metal nickel, the deposits of which in the Sudbury district constitute one of the two sources of the world's supply. In the smelting of iron ore a fair beginning has been made, but the capabilities of expansion in this line have as yet been scarcely more than touched. The magnetite deposits of eastern Ontario and the hematite and magnetite of northwestern Ontario taken together are more than sufficient to supply our own needs in the way of iron for perhaps centuries to come Among the non-metallic substances we possess the basis of two permanent and important industries in our salt beds and petroleum wells. The whole shore of lake Huron from the latitude of Kincardine southward, and for many miles inland, is underlaid with beds of salt hundreds of feet thick, supplying the raw material not only for refined salt itself, but for carbonate and bi-carbonate of soda, soda ash, bleaching powder, and other essentials for the textile and other industries. The petroleum industry leads all others of a mineral nature in the value of yearly output, and affords an admirable example of what enterprise and skill can do in the profitable utilization of raw material. Another instance of this is seen in the cement business, which has undergone satisfactory development during the past few years. In the products of clay—brick, tile, terra cotta and sewer pipe—the output is limited only by the market. A new branch of the business has recently been established in the manufacture of paving brick. The use of this article for street purposes seems bound to be very extensive, now that Canadian makers have shown that the product of their kilns is comparable in quality with brick from the yards of Ohio and Illinois, besides being lower in price. Natural gas is a substance which in point of value stands high in the list of Ontario's mineral products, although it is to be regretted that so much of it is taken out of the country for consumption. In almost every one of the minerals here mentioned the opportunities for the profitable investment of capital are numerous, and the vivifying touch of enterprise and capital is alone wanted to call many other industries into being. There is abundance of raw material, cheap labor, large water privileges available for power, facilities for distribution by land and water, and safety of life and property, the only limit to development in some lines being the narrowness of the market. But in one branch of the industry, that of gold mining, there is practically no limit; no civilized country builds or maintains a barrier to shut out gold The free milling ores of northern and northwestern Ontario offer pro-probably as fair a reward to the miner and capitalist as any ores in the world, and their extent and continuity admit of no doubt. A small pocket or a placer tract may soon be worked out, but a quartz vein of moderate extent may afford abundant material for a business man's lifetime. Such a vein crossing a location of 20 chains square or 40 acres, if four feet wide and worked to a depth of 500 feet, would furnish rock to supply a 10-stamp mill night and day and 300 days in the year for more than 30 years. A profit of $5 per ton would net a 10-stamp mill $30,000 a year, and there are many properties in the Lake of the Woods and Seine river districts which would approximate this standard with such a mill, after all allowance is made for irregularities in the size of veins and in the quantity of their ore contents. Such a business would be a permanent one, affording a constant market for labor and a steady return on invested capital long after the placer fields of more distant and inhospitable regions had been deserted as barren wastes.

In the month of June a Mining Lands Agency of the Crown Lands Department was opened at Rat Portage to receive applications for mineral lands in the Lake of the Woods district. This office has proved to be a great convenience to prospectors by the facilities it affords for carrying on business with the Department, and has also served a good purpose in relieving the pressure of work at the head office. Maps upon which are laid down all locations applied for and locations for which

patents or leases have issued are kept for the purpose of reference, together with a register of every transaction, so that information may be promptly given to explorers and others regarding any property in the district. All official papers, affidavits, etc., relating to lands applied for, however, are forwarded to the head office for ruling by the Commissioner, who has sole authority to decide disputes and order titles to issue. From the opening of the Rat Portage office until the end of the year 501 applications were received, but in some cases one application covered several locations, and on account of these there was received and paid through the office the sum of $5,932.57.

After having been held in abeyance for more than a quarter of a century the part of the Mines Act which relates to the staking out and working of mining claims by licensees was brought into operation last year in a portion of the Province lying east and north of lake Superior. The report that promising discoveries of gold had been made in the basin of the Michipicoton river induced the Government to make a trial of the mining claims system, and accordingly on the 9th of September an Order in Council was passed whereby the Michipicoton Mining Division was established, and on the 15th of the same month Regulations based on the Mines Act were approved by His Honor the Lieutenant Governor for use in Mining Divisions. The Michipicoton Division has for its southern limit the latitude of Cape Gargantua on lake Superior, 47° 36′ north, for its eastern limit the meridian of the east end of Dog lake, or about 84° west from Greenwich, for its northern limit the parallel of 48° 30′, and for its western limit the shore line of lake Superior between the above lines of latitude. The total area is computed to be about 5,000 square miles. An Inspector was appointed for the Division, who opened an office at Michipicoton Post for the transaction of business on the 23rd of September, and remained there until the close of navigation on the 1st of November. The total number of miners' licenses issued for the Division from the date of its establishment to the end of the year was 250, and the number of mining claims staked out and recorded during that time was 225. The revenue of the office from licenses, fees on additional claims taken up and other fees, was $3,021.

Several amendments to the Mines Act were suggested by the experience of the office at Michipicoton Post, and in the last session of the Legislature an Act was passed to give effect to them. Revised and amended Regulations, embodying the changes made by the Act, were approved by His Honor the Lieutenant Governor on the 29th of January, and these are now in force in the Michipicoton Division. The more important alterations relate to the granting of licenses, the size of claims, the performance of working conditions, and the acquisition of permanent title when the working conditions have been fulfilled. Any person, registered partnership, or mining company incorporated under the laws of the Province may procure a yearly license to explore any portion of the Mining Division and stake out and work a claim therein upon payment of a fee of $10, and the license is renewable upon payment of the like fee and production of proof under oath that the mining conditions have been duly performed upon the claim or claims staked out and held by the licensee. A claim may be of 15 chains or 990 feet square, horizontal measurement, containing 22½ acres, or of other extent greater or less according to the nature of the ground, not to exceed a square of 20 chains or 1320 feet containing 40 acres; but an irregular portion of land lying between two or more claims may be staked out with boundaries conterminous thereto, provided that its area shall not exceed 40 acres. The boundary lines of a claim on the surface are required to be laid out north and south and east and west astronomically, and where there are standing trees on the claim the licensee is required to blaze the trees and cut the underbrush along the boundary lines and from the first corner post to the discovery post. A claim under the surface of the ground is deemed to be bounded by lines vertical to the horizon. No more than one claim may be staked out by a licensee upon the same vein, lode or deposit of ore or

mineral unless it is distant at least 60 chains from the nearest known mine, claim or discovery on the same vein lode or deposit, and no licensee may stake out and record more than four claims within a radius of 15 miles in one calendar year. For each additional claim after the first that has been staked out and recorded a fee of $10 a year is levied if the area is more than 15 chains square, and $6 if it is 15 chains square or less. A licensee who stakes out a claim is required within 30 days to file a record of it under oath in the office of the Inspector for the Division. It is this officer's duty forthwith to enter the particulars in a record book, and if there is no dispute by reason of prior discovery or otherwise he may at the expiration of ninety days grant to the licensee a certificate of the record. Actual mining operations are required to be carried on by each licensee upon each claim held by him for at least five months of one man's time in every calendar year, or an equivalent if more than one man is employed; but for every four claims or less held by the same licensee or by different persons agreeing to combine their mining operations within a radius of one mile, all the work may be expended upon one of the claims. No payment of money is accepted in lieu of working conditions, and no improvements such as roads or buildings; nothing else can be substituted for "actual mining operations," and in each calendar year five months or 130 days of one man's labor is demanded by the Regulations, or the equivalent of that time if two or more men are employed on the claim. Should the licensee desire to secure a more permanent title to his claim than occupation or the Inspector's certificate affords, provision is made in the Regulations for obtaining a patent or lease. If the working conditions have been complied with for a period of three years on a claim of 20 chains square, or of two years on a claim of 15 chains square or less, or an equivalent in a less period of time if more than one man is employed, the licensee may apply for and obtain a patent or lease of the land embraced in his claim upon a survey being made and filed in the regular way and upon payment to the Crown of the purchase price or first year's rental at the rates provided in the Mines Act. The claim may then be held free from further working conditions, but not otherwise.

The Journal of the Royal Colonial Institute published in its February number of this year a paper on the Goldfields of Ontario and British Columbia which was read at a meeting of the Institute on January 11 by one Edgar P. Rathbone, M. Inst. M. M., A. M. Inst. C. E., M. I. Mech. E., who visited Canada last year. The Right Hon. Lord Strathcona and Mount Royal, High Commissioner for Canada, presided, and among others who were present and spoke in laudatory terms of the paper were Right Hon. James Bryce and Hon F. W. Borden, the Canadian Minister of Militia. There was little in the paper which any well informed Englishman might not have written without leaving his own home, but it contains a number of statements which no intelligent and careful man could have written who had taken ordinary pains to inform himself.

Mr. Rathbone says in his paper that the mining laws of Ontario are greatly inferior to those of British Columbia, "owing to the introduction of certain measures whereby the genuine mining prospector is placed at a distinct disadvantage." By this, as subsequently qualified, he meant only that the prospector is obliged to hand to the Government a survey which costs a good deal of money—Mr. Rathbone thinks about a dollar an acre. But this is mere guess; and all depends on where the location is. If in a surveyed district the prospector has nothing to pay, and if in an unsurveyed district the lower price of the land is supposed to make good the cost of survey. In the Crown Lands Department the average cost of a survey is assumed to be fifty cents per acre; but of course it may be more if the distance is far to the location. The difference in price between a mining lot in a surveyed township within six miles of a railway and a lot in unsurveyed territory more than six miles from a railway is one dollar per acre; and so the prospector is placed at no disadvantage. But if the objection be that the prospector is obliged to make his survey at too early a period of the mining work, the answer is

that he does so to acquire his patent for the location. Then it is entirely his own, to work it or to sell it, and surely this is not a disadvantage to him. Under the British Columbia law the prospector is also required to survey his claim of 50 acres, and can only get a title at the end of five years and the expenditure of $500 in developing a mine upon it. But if he is a wealthy man he may become entitled to a Crown grant upon payment of $500 to the Government in lieu of any expenditure upon the claim

Then Mr. Rathbone assumes that there are no working conditions attached to the holding of mineral land in Ontario. "This is the case in British Columbia," he says, "but in Ontario, after making a costly survey, large blocks of claims are held by the payment of a small sum and no work is necessarily done, so that prospecting work is in a very backward condition." Evidently he has not taken the trouble to know what the Ontario law is. Section 34 of the Mines Act requires that during the seven years immediately following the issue of the patent the grantee of a mining location shall expend in actual mining operations, exclusive of all houses, roads and other like improvements, a sum not less than at the rate of $1 per acre during the first two years, and of $1 per acre during each remaining year of the seven years, computed at the rate of $2 per man per day; and in default of such expenditure in any year all his rights to the location revert to the Crown. Working conditions were provided for in the Act of 1891 at a rate of $5 per acre on every location of 160 acres or less, to be expended during the seven years immediately following the issue of the patent, and these conditions must be carried out during the present year on lands granted in 1891 if for any cause the work has not already been done. The amendment made to the Mines Act last year requires a larger expenditure for mining operations, and a fixed amount annually after the first year, amounting in all to $6 per acre in the seven years, being $240 on 40 acres, which is the smallest area that can be taken up as a mining location. And it may be stated that a larger area of mining lands was granted in the Province last year than in the preceding five years, although the amended Act provides that no man can take up more than 320 acres within a radius of 15 miles in any one district or county. As a matter of fact the average area of all mining locations sold and leased in the past seven years has been only 103 acres; and so there is no ground for the sweeping statement that large blocks are held by the payment of a small sum and no work done.

But under the provisions of the Ontario Mines Act for the staking out of mining claims, which are in force over an area of 5,000 square miles in the Michipicoton Mining Division, the working conditions are more exacting than in British Columbia. There every licensee who has staked out a claim is required to put upon it five months of actual mining work in each year. Before he can apply for a patent he must show that on a claim of 15 chains square, or 22½ acres, he has expended 10 months of one man's labor, which at $2 per day is $520; and if the claim is 20 chains square, or 40 acres, he must show that he has expended 15 months of one man's labor, or $780. The Ontario law also requires that claims be staked out with astronomical boundary lines of north and south, and east and west, thus lessening the chance of disputes between adjacent claim holders.

Leaving the subject of mining laws, Mr. Rathbone has much to say in praise of the method of mineral statistics in operation in the Transvaal, where he seems to have been employed under President Kruger, and he makes the following statement on the inefficiency of the method in operation here (the italics being his own): "In order to illustrate the injury which may be done to a mining community, and indeed to the State at large, through the *non-enforcement of statistical information* by the Government from mine owners, I may here state that at the present time the largest gold-producing mine in the Province of Ontario, being a private venture, does not make any public returns of its gold production, nor indeed is it possible to obtain any statistical information as to what the undertaking is; so that what might have acted as a valuable object lesson in connection with the mining in that district is entirely lost to the whole

community." This can only refer to the Sultana mine, the owner of which is Mr. John F. Caldwell. The provisions of the Mines Act do not distinguish between private ventures and company ventures in the furnishing of statistical information. The owner or agent of every mine is required to send to the Bureau of Mines on or before the 15th of January, a correct return for the year ending the preceding 31st day of December of the men employed at his mine and works, the average rate of wages paid to them and the total amount paid during the year, together with the quantity of the mineral which has been sold, treated or used during the year, and the value or estimated value thereof. And in addition the owner or agent of every metalliferous mine may be required to make similar returns at the end of each month or quarter in order that the same may be tabulated for publication. Now, Mr. Caldwell has never refused to supply such information to the Bureau. The statistics of his mine have been furnished regularly every year with as much promptness as those of any mine in the Province, and no statement of the gold product of the Province has been published since the mill of the Sultana mine was started five years ago which did not contain the statistics of that mine. It is true that they have not been published separately, but neither have those of any other mine or works in the Province. The time for that has not come yet.

One other statement made in Mr. Rathbone's paper is that "The Dominion Government should in any case have a separate office to collect all the mineral statistics from the various Provinces in one statement, as under the present arrangement it is difficult to ascertain what the total annual production of gold and other minerals amounts to." This is in connection with a reference to the work of the British Columbia and Ontario Bureaus, and an ill-concealed sneer at the latter. Mr. Rathbone apparently does not know that the Dominion Government already has an office for the collection of mineral statistics from all the Provinces, although that office was established by the Geological Survey twelve years ago and has published statistical reports of the mineral production of the Dominion every year since.

As already intimated, Mr. Rathbone made a visit to Canada last year, and in the month of June he was present and spoke at a Mining Convention at Rat Portage. Although he had then been in the district but two or three days, he condemned the Governments of Canada and Ontario because they had done nothing for the miner, he condemned the mining laws of Ontario and its system of mineral statistics, he condemned the Sultana mine and its management although he had only seen it for half an hour along with a crowd of a hundred or more other people and was not allowed to descend the shaft, he condemned the timber of the country as material for fuel, he condemned everything but the water. The writer of this note was present on that occasion, and being invited to speak he replied to Mr. Rathbone ; but the paper read before the Royal Colonial Institute in January shows that Mr. Rathbone did not profit by what he heard in June.

It has never been the practice of this Bureau to notice the comments or criticism of men, either upon its own management, or upon the mining laws of the Province, or upon the value of our mineral resources ; and adverse comments have sometimes been made by men upon one ground or another which were not always considerate or fair. This recent instance however appears to justify a departure from the rule hitherto observed, not because any importance is attached to Mr. Rathbone or the many titles appended to his name, but because of the place in which the paper was read and of the distinguished men who were present to hear it. A man who is either not an honest critic, or who will not qualify himself by information to express an intelligent criticism, no matter what his professions or attainments may be, is not one to be depended on as counsellor or guide in the business affairs of men. A. B.

Statistics of Mining Lands and Minerals

Mining Companies

ONE of the striking evidences of the interest shown in mining enterprise in Ontario is the number of companies that are being organized for mining purposes. In the list which follows are the Companies to which charters have been granted in Ontario for the last thirty years, with the dates of their incorporation and the amounts of their authorized capital.

Mining Companies Incorporated since 1867

Name of Company.	Date of Charter.	Capital.
The Anglo-Saxon Gold Mining Company	March 9, 1868..	$ 125,000
The Angus Islets Silver Mining Company	Sept. 5, 1874..	1 000,000
The Artikameg Prospecting, Mining and Lumbering Company.	July 1, 1875..	100,000
The Arthur Mining Company of Ontario	Feb. 28, 1884..	750,000
The Alpha Oil, Gas and Mining Company of Ontario, Limited.	Aug. 22, 1885..	1,000,000
The Algoma Mineral Land Company, Limited	Dec. 19, 1888..	200,000
The Algoma Gold Mining and Reduction Company, Limited	June 30, 1890..	500,000
The Algoma Copper Mining Company, Limited	March 31, 1896..	1,000,000
The Algoma Coal Mining Company, Limited	Dec. 30, 1896..	1,000,000
The Atlas Gold Mining and Development Company of Rat Portage, Limited	Jan. 20, 1897..	90,000
The Attercliffe Station Natural Gas Company, Limited	March 3, 1897..	2,000
The Anglo-Ontario Exploration and Gold Mining Company, Limited	March 15, 1897..	1,000,000
The Ambrose Mine and Development Company, Limited	March 19, 1897..	1,000,000
The Algonquin Gold Mining and Development Company, Limited	March 23, 1897..	1,000,000
The Assaying and Smelting Company of Ontario, Limited	April 17, 1897..	75,000
The Aurora Mining and Development Company of Ontario, Limited	April 14, 1897..	1,000,000
The AD2 Gold Mining Company of Ontario, Limited	Aug. 19, 1897..	500 000
The Atkinson Marble and Granite Company of Simcoe, Limited	Oct. 6, 1897..	20 000
The Beaver Mining and Milling Company of Ontario	Nov. 6, 1886..	1,000,000
The Bedford Mining Company	Sept. 3, 1887..	250,000
The Bancroft Iron Company, Limited	Sept. 12, 1889..	1,000,000
The Belmont Bessemer Ore Company, Limited	April 17, 1891..	600,000
The Bonanza Nickel Mining Company of Sudbury, Limited	May 6, 1891..	150,000
The Badger Silver Mining Company of Gillies, Ontario, Limited	June 20, 1891..	250,000
The Bullion Mining Company of Ontario, Limited	Feb. 18, 1893..	300,000
The Bath Island Mining Company, Limited	Mar 3, 1897..	750,000
The Black Sturgeon Mining Oompany of Ontario, Limited	Mar. 1, 1897..	1,000,000
The Bald Indian Bay Mining and Investment Company, Limited	Feb. 15, 1897..	6,000
The Burley Gold Mining Company of Ottawa, Limited	Feb. 15, 1897..	1,000,000
The Bi-Metallic Mining and Development Company of Ontario	April 7, 1897..	2,000,000
The Bannockburn Gold Mining Company, Limited	April 17, 1897..	500,000
The Canadian Mineral Company	May 18, 1870..	100,000
The Canada Silver Mining Company	May 29, 1874..	500,000
The Canada First Silver Mining Company (Name since changed to The Native 7 Silver Mining Co)	Oct. 27, 1875..	240,000
The Calabogie Mining Company, Limited	May 1, 1882..	2,500,000
The Coe Hill Mining Company	May 7, 1883..	750 000
The Cleveland Mining Company of Ontario	Dec. 3, 1884..	750,000

Name of Company.	Date of Charter.	Capital.
The Cross Lake Silver Mining Company, Limited	Mar. 29, 1892..	$ 50,000
The Commercial Mining Company of Algoma, Limited	April 22, 1892..	100,000
The Crescent Nickel Mining Company of Algoma, Limited	Oct. 7, 1892..	200,000
The Creighton Gold Mining Company, Limited	Nov. 16, 1892..	1,000,000
The Crystal Gold Mining Company of Rathbun, Limited	Nov. 1, 1894 .	1,000,000
The Canonto Mica and Mineral Company, Limited	Oct. 10, 1895..	22,000
The Credit Forks Mining and Manufacturing Company	Feb. 14, 1896..	200,000
The Canadian Gold Fields Company, Limited (an Imperial Company Licensed)	Dec. 24, 1896..	2,000,000
The Citizens Gold and Coal Mining Company of Sudbury, Limited	April 13, 1897..	1,000,000
The Coronado Gold Mining Company of Rat Portage, Limited.	Mar. 3, 1897..	40,000
The Central Ontario Mining Company, Limited	Mar. 1, 1897..	49,000
The Cronsted Mining Company of Algoma, Limited	Feb. 24, 1897..	450,000
The Comstock Gold Mining and Development Company of Ontario, Limited	Mar. 15, 1897.	600,000
The Czar Gold Mining Company of Ontario, Limited	Mar. 23, 1897..	1,000,000
The Climax Gold Mine Company of Ontario, Limited	Mar. 23, 1897..	1,000,000
The Consolidated Gold Fields Development Company of Ontario, Limited	May 5, 1897..	2,000,000
The Canesda Mineral Water Company of Toronto, Limited	June 1, 1897..	2,000
The Combined Gold Mines Company of Ontario, Limited	June 21, 1897..	1,000,000
The Cameron Islands Mining and Development Company, Limited	Nov. 10, 1897..	250,000
The Chippewa Gold Mining Company of Ontario, Limited	Sept. 25, 1897..	1,000,000
The Desert Lake Iron Company.	June 30, 1881..	250,000
The Denison Mining Company of Ontario, Limited	Sept. 8, 1888..	250,000
The Drury Nickel Company, Limited	Jan. 6, 1892..	500,000
The Delaware and Mount Brydges Oil and Gas Company, Limited	Mar. 23, 1897..	10,000
The Diamond Jubilee Mineral Development Company of Ontario, Limited	May 12, 1897.	2,000,000
The Detroit and Hastings Mining and Milling Company, Limited	Nov. 3, 1897..	2,000,000
The Diamond Park Mineral Water Company of Arnprior, Limited	Nov. 27, 1897..	20,000
The Enterprise Mining Company of Black Bay, Lake Superior.	May 27, 1877..	300,000
The Erie Mining Company of Ontario	Jan. 9, 1880..	30,000
The Elgin Silver Mining Company, Limited	May 9, 1882..	50,000
The Electro-Mercurial Amalgamator and Mining Company of Ontario, Limited	July 22, 1890..	100,000
The Eagle Nest Gold Mining Company of Ontario, Limited	Aug. 3, 1892..	200,000
The Empress Gold Mining Company of Ontario, Limited	Feb. 7, 1896..	100,000
The Equitable Mining and Development Company of Ontario, Limited	Mar. 10, 1897..	1,000,000
The Eastern Mining Syndicate of Ontario, Limited	Feb. 17, 1897..	1,000,000
The Economic Gold and Nickel Pyritic Smelting Company of Sudbury, Limited	April 14, 1897..	300,000
The Eastern Townships Mining and Development Company of Ontario, Limited	June 23, 1897..	500,000
The Eureka Mining Company of Thessalon, Limited	July 8, 1897..	199,000
The Elginfield Oil and Gas Developing Company of Dutton, Limited	May 5, 1897..	49,000
The Foxton Phosphate Mining Company and Imperial Company, Licensed	Sept. 7, 1890..	60,000
The Fairbanks Consolidated Mining Company, Limited	June 26, 1890..	500,000
The Foley Mines Company of Ontario, Limited	Nov. 25, 1896..	1,000,000

Name of Company.	Date of Charter.	Capital.
The Fort Frances Mining Company, Limited	May 26, 1897..	$ 40,000
The Folger Hammond Mines Company, Limited	Oct. 7, 1897..	1,000,000
The Furnace Falls Iron Co	Sept. 12, 1883..	100,000
The Galway Mining Company	July 18, 1868..	20,000
The Gladstone and Sulphuret Gold Mining Company of Ontario, Limited	Feb. 16, 1882..	300,000
The Gould Lake Mining Company, Limited	Nov. 27, 1889 .	300,000
The Gravel Bay Mining Company of Ontario, Limited	Jan. 25, 1890..	100,000
The Gold Rock Mining and Smelting Company of Algoma and Nipissing, Limited	Jan. 23, 1896..	100,000
The Great Northern Mining Exploration and Development Corporation of Ontario, Limited	Dec. 2, 1896..	475,000
The Golden Fissure Mining Company of Ontario, Limited	Dec. 24, 1896..	1,000,000
The Grimsby Gold Mining Company, Limited	Jan. 8, 1897..	200,000
The Golden Goblin Mining Company of Ontario, Limited	Jan. 20, 1897..	500,000
The Gold Hills Exploration and Development Company of Toronto, Limited	Jan. 27, 1897..	2,000,000
The Gagné Island Gold Mine Company of Ottawa, Limited	Feb. 12, 1897..	500,000
The Golden Gate Mining and Development Company of Rainy River, Limited	March 10, 1897..	300,000
The Gold Brick Mining and Development Company of Saw Bill Lake, Limited	April 7, 1897..	500,000
The Golden Island Mining Company of Rainy River, Limited	April 30, 1897..	750,000
The Gold Cliff Mining and Development Company, Limited	April 17, 1897..	1,000,000
The Golden Star Mining and Exploration Company of Ontario, Limited	May 26, 1897 .	1,000,000
The Gold Quartz Free Milling, Mining and Development Company of Ontario, Limited	June 11, 1897..	2,000,000
The Golden Prince Mining and Development Company of Algoma, Limited	May 5, 1897..	750,000
The Gold Horn Mining Company of Lennox and Addington, Limited	May 20, 1897..	45,000
The Golden Crown Mining Company of Ontario, Limited	June 23, 1897..	950,000
The Gold King Mining Company of Toronto, Limited	July 7, 1897..	2,000,000
The Great Granite Gold Mining and Development Company of Ontario, Limited	Aug. 12, 1897..	5,000,000
The Gold Creek Mines and Exploration Company of Ontario, Limited	Aug. 19, 1897..	500,000
The Garcia Gold Mining Company of London, Limited	Oct. 20, 1897..	50,000
The Gold Fields Company of Michipicoten, Limited	Nov. 27, 1897..	1,000,000
The Grand Calumet Mining Company of Ottawa, Limited	Dec. 1, 1897..	475,000
The Highland Mining Company	May 22, 1875..	600,000
The Hastings Iron Company, Limited	Dec. 1, 1880..	150,000
The Huronian Mining Company of Ontario	Feb. 20, 1883..	100,000
The Heron Bay Mining Company	July 19, 1883..	200,000
The Haliburton Mining Company, Limited	Sept. 17, 1890..	100,000
The Homestake Mining Company of Algoma, Limited	April 23, 1892..	300,000
The Hastings Mining and Reduction Company, Limited	Aug. 4, 1892..	100,000
The Hamilton Natural Gas and Mining Company, Limited	Oct. 27, 1892..	50,000
The Heather Bell Gold Mining Company of Toronto, Limited	Nov. 6, 1896..	1,000,000
The Hammond Gold Reef Mining Company, Limited	March 17, 1897..	1,000,000
The Hawk Bay Gold Mining Company, Limited	Jan. 29, 1897..	150,000
The Hub Gold Mining and Development Company of Ontario, Limited	April 17, 1897..	600,000
The Hamilton Iron Mining Company, Limited	May 12, 1897..	90,000
The Hastings Silver-Lead Mining Company, Limited	Aug. 12, 1897..	50,000
The Hiawatha Gold Mining and Milling Company of Ontario, Limited	Aug. 12, 1897..	500,000

Name of Company.	Date of Charter.	Capital.
The International Silver Mining Company of Ontario	June 24, 1875..	$2,000,000
The Imperial Land and Mining Syndicate of Algoma, Limited.	May 9, 1888..	200,000
The Inter-Ocean Mining and Prospecting Company of Toronto, Limited	Jan. 20, 1897..	1,000,000
The Industrial Mining, Development and Investment Company of Toronto, Limited	March 17, 1897..	150,000
The Indian Chief Gold Mining and Development Company of Ontario, Limited	April 14, 1897..	1,000,000
The Investors Mining and Development Company of Toronto, Limited	April 28, 1897..	1,000,000
The Intercolonial Deep Well Boring and Manufacturing Company of Petrolea, Limited	Aug. 12, 1897..	150,000
The Jackfish Lake Mining Company	May 22, 1875..	600,000
The Jackfish Bay Syndicate Mining Company, Limited	April 23, 1897..	99,000
The John Dwyer Gold Mining Company of Toronto, Limited..	July 23, 1897..	450,000
The Kashabowie Mining Company	April 12, 1876..	600,000
The Kingston and Pembroke Iron Mining Company	May 11, 1887..	5,000,000
The Kaladar Mining Company, Limited	Sept. 1, 1890..	120,000
The Kingston Phosphate Company, Limited (An Imperial Company authorized to do business in Ontario)	March 12, 1890..	25,000
The Keewatin Gold Mining, Prospecting and Development Company, Limited	April 7, 1897..	750,000
The Kabaskong Gold Mining Company of Ontario, Limited...	April 21, 1897..	500,000
The Kobold Gold Mining Company of Ottawa, Limited	Nov. 12, 1897..	500,000
The Klinck Brick and Stone Slab Company of Toronto, Limited	Dec. 6, 1897..	75,000
The Klondike and North-West Mining Corporation of St. Thomas, Limited	Dec. 15, 1897..	475,000
The Lake Superior Silver and Gold Mill Reducing Works and Mining Company of Thunder Bay	June 4, 1875..	400,000
The Lavant Mining Company, Ontario	April 15, 1882..	500,000
The Lake Superior Native Copper Company, Limited (Licensed)	Sept. 9, 1882.....	.
The Lake Superior Copper Company, Limited, formerly Lake Superior Native Copper Company	June 24, 1885..	600,000
The Lake Superior Mining Company Limited (An Imperial Co'y authorized to do business in Ontario)	Feb. 10, 1890..	100,000
The Lake of the Woods Gold and Silver Reduction Company, Limited	April 16, 1890..	500,000
The Low Phosphorus Ore Properties Company of Ontario, Limited	Oct. 20, 1892..	350,000
The Ledyard Gold Mines Company, Limited	Mar. 7, 1894..	1,000,000
The Lake Opinicon Phosphate Company, Limited	Sept. 15, 1894 .	15,000
The Lake Harold Gold Mines Company, Limited	June 12, 1896..	150,000
The Lake Harold Gold Mines Company, Limited.	Dec. 9, 1896..	1,000,000
The Lakeside Gold Mining Company of Rat Portage, Limited.	Jan. 6, 1897..	750,000
The Leap Year Consolidated Gold Mining Company, Limited.	Jan. 27, 1897..	1,000,000
The La Reine Gold Mining Company of Ontario, Limited	April 12, 1897..	1,000,000
The Lake Medad Portland Cement Company, Limited	April 12, 1897..	150,000
The London Oil Company, Limited	Sept. 2, 1897..	3,000
The Mississippi Mining Company	Aug. 4, 1880..	200,000
The Michipicoten Native Copper Company, Limited (A licensed Imperial Co)	Sept. 14, 1882..	500,000
The Michipicoten Copper Company (previously Michipicoten Native Copper Co)	Nov. 30, 1883.....	
The Marmora Gold and Iron Mining Company	Nov. 29, 1882..	500,000
The Maple Leaf Gold Mining Company of Ontario, Limited...	May 1, 1889..	20,000

Name of Company.	Date of Charter.	Capital.
The Mattawan Iron Mining Company, Limited	July 21, 1891..	$ 100,000
The Marmora Reduction Company	May 30, 1894..	24,000
The Mikado Gold Mining Company, Limited (An Imperial Company, Licensed)	Nov. 6, 1896..	225,000
The Mississaga River Gold Mining Company of Ontario, Limited	Jan. 13, 1897..	490,000
The Magatherium Gold Mining Company of Jackfish, Limited.	April 7, 1897..	100,000
The Minerals Exploration and Development Company of Ontario	April 2, 1897..	2,000,000
The Mandarin Gold Mining Company of Ontario, Limited	April 14, 1897..	300,000
The Mica and Mining Company of Ontario, Limited	April 28, 1897..	75,000
The Mines Selection Company of Toronto, Limited	May 26, 1897..	200,000
The Mineral King Mining and Development Company of Ontario, Limited	May 26, 1897..	77,000
The Mohawk Mining Company of Rat Portage, Limited	April 21, 1897..	495,000
The Manitou Gold Mining Company, Limited	May 12, 1897..	1,000,000
The Mines Investment Association of Ontario, Limited	June 1, 1897..	100,000
The Methuen Mining Company, Limited	June 1, 1897..	450,000
The Mine Centre Development Company, Limited	Aug. 27, 1897..	50,000
The McNab Iron Company	May 15, 1897..	50,000
The McGown Gold Mining Company of Parry Sound, Limited.	April 7, 1897..	1,000,000
The McIntosh Granite and Marble Company, Limited	April 21, 1897..	48,000
The Native 7 Silver Mining Company (previously Canada First Silver Mining Company	Oct. 27, 1875..	500,000
The Neebish Mining Company	May 22, 1875..	600,000
The North Lake Mineral Land Company of Ontario, Limited .	Dec. 19, 1888..	168,000
The North American Chemical Mining and Manufacturing Company of Ontario (changed to Owen Sound Portland Cement Co., Limited	April 16, 1888..	100,000
The North Shore Nickel and Copper Mining Company, Limited	April 7, 1891..	500,000
The Nickel Belt Mining Company of Graham, Limited	Dec. 16, 1891..	75,000
The Neepawa Gold Mining Company of Ontario, Limited	Feb. 3, 1897..	1,000,000
The Nugget Gold Mining Company of Rat Portage, Limited ..	Feb. 12, 1897..	50,000
The Nan Ki Poo Gold Mining Company of Ottawa, Limited...	Feb. 17, 1897..	1,000,000
The New Ontario Mining and Development Company, Limited	May 12, 1897..	50,000
The North Star Mining and Development Company of Toronto, Limited	April 21, 1897..	5,000,000
The Ontario Mining and Manufacturing Company, Limited ...	Dec. 28, 1875..	50,000
The Ontario Joint Stock Phosphate Mining Company, Limited	April 18, 1883..	20,000
The Opinicon Mining Company	July 3, 1888..	50,000
The Ogema Mining and Smelting Company of Thunder Bay, Limited	Feb. 5, 1891..	150,000
The Ontario Nickel Mountain Mining Company, Limited	May 7, 1891..	500,000
The Ontario Silver and Antimony Mining Company	Dec. 29, 1892..	300,000
The Ontario Mines Development Company, Limited	Oct. 30, 1896..	50,000
The Ontario Gold Fields Mining and Development Company, Limited	Jan. 6, 1897..	2,500.000
The Original Swede Boys' Prospecting Company of Rainy River, Limited	Mar. 10, 1897..	90,000
The Ottawa Gold Milling and Mining Company, Limited	April 9, 1897..	1,000,000
The Ontario Reefs Mining and Development Company, Limited	April 17, 1897..	5,000,000
The Ontario Prospectors' Mining and Development Company, Limited	April 21, 1897..	1,000,000
The Oriole Gold Company of Wabigoon and Saw Bill Lakes, Limited	July 21, 1897..	24,000

Name of Company.	Date of Charter.	Capital.
The Ontario Lithographic Stone and Mining Company, Limited	Nov. 10, 1897..	$ 250,000
The Otisse Gold Mining Company of Schreiber, Limited	Dec. 6, 1897..	1,000,000
The Percy Mining Company	Mar. 13, 1888..	30,000
The Providence Gold Mining Company of Norland, Limited	May 2, 1895..	40,000
The Princess Gold Mining Company of Ontario, Limited	Oct. 21, 1896..	500,000
The Preston Gold Mining Company of Seine River, Limited	Nov. 4, 1896..	50,000
The Pipestone Gold Mining Company, Limited (an Imperial Co., Licensed)	Aug. 6, 1896..	500,000
The Premier Gold Mining Company of Ontario, Limited	Mar. 10, 1897..	495,000
The Plutus Gold Mining Company of Sault Ste. Marie, Limited	Feb. 5, 1897..	1,000,000
The Palmita Mining and Development Company of London, Limited	June 23, 1897..	1,000,000
The Peninsular Mining and Development Company of Ontario, Limited	June 23, 1897..	900,000
The Producers' Oil, Gas and Mining Company of Welland, Limited	Dec 18, 1897..	10,000
The Queen Bee Gold Mining Company of Ottawa, Limited	Feb. 15, 1897..	1,000,000
The Queen of the Lakes Gold Mining and Development Company of Ontario, Limited	Mar. 23, 1897..	1,000,000
The Queenston Quarry Company, Limited	April 17, 1897..	50,000
The Roberts Iron Company, Limited, Ontario	Dec. 3, 1880..	100,000
The Rabbit Mountain Mining Company of Ontario, Limited	Nov. 5, 1897..	2,000,000
The Rainy River Mining Company, Limited	Nov. 4, 1896..	1,000,000
The Rupert Mining Company of Ontario, Limited	Feb. 5, 1897..	200,000
The Rand Gold Mining Company of Wabigoon, Limited	May 5, 1897..	1,000,000
The Railroaders' Gold Mining Company of Ontario, Limited	Sept. 2, 1897..	500,000
The Superior Silver Mining and Land Company	Feb. 2, 1871..	40,000
The Shaftesbury Gold Mining Company of Lake Shebandowan	Oct. 21, 1873..	50,000
The Shebandowan Mining Company	Mar. 25, 1875..	1,000,000
The Silver Lake Mining Company	Dec. 31, 1875..	1,200,000
The Snowdon Iron Mining and Blast Furnace Company	Mar. 22, 1879..	100,000
The San Augustin Mining Company of Toronto, Limited	May 7, 1884..	1,250,000
The Storrington Mining Company	Sept. 16, 1886..	30,000
The Sudbury Mining Company, Limited	Dec. 28, 1888..	100,000
The Sydenham Mica and Mining Company, Limited	May 10, 1889..	250,000
The Stirling Phosphate and Mining Company of Kingston	Jan. 4, 1890..	50,000
The Sault Ste. Marie North Shore Mining Company, Limited	Feb. 13, 1890..	200,000
The Silver Centre Mining Company of Ontario, Limited	June 20, 1890 .	300,000
The Standard Asbestos Company of Ontario	Nov. 12, 1890 .	100,000
The Sudbury Nickel Company, Limited	May 29, 1891..	50,000
The Sault Ste. Marie Nickel Mining and Agency Company	Oct. 15, 1891..	45,000
The Straight Lake Nickel Mining Company, Limited	Nov. 11, 1891..	300,000
The Sudbury Customs Smelting Company, Limited	March 15, 1892..	75,000
The Spanish River Talc and Nickel Mining Company of Algoma, Limited	Dec. 20, 1894..	96,000
The Saw Bill Lake Gold Mining Company, Limited	May 26, 1896..	100,000
The Seine Manitou Gold Mining Company, Limited	Sept. 9, 1896..	100,000
The Standard Mining and Development Company of Ontario, Limited	Dec. 24, 1896..	500,000
The Sweden Gold Mine Company of Ontario, Limited	Jan. 6, 1897..	500,000
The Security Gold Mining and Development Company of Ontario, Limited	March 1, 1897..	1,500,000
The Sovereign Gold Mining and Development Corporation of Ontario, Limited	March 3, 1897..	2,500,000

Name of Company.	Date of Charter.	Capital.
The Shoal Lake and Seine River Mining Company, Limited ..	April 7, 1897..	$ 600,000
The Scramble Gold Mining Company of Ontario, Limited	April 7, 1897..	1,000,000
The Sylvan Oil Company of Ontario, Limited	June 8, 1897..	350,000
The Soo Mining and Exploring Company of Algoma, Limited.	June 23, 1897..	99,000
The Thunder Bay Silver Mining Company.....	June 2, 1868..	400,000
The Toronto and Whitby Mining Company	June 13, 1868..	50,000
The Toronto Gold Mining Company	Oct. 30, 1873..	500 000
The Toronto Mining and Exploring Company, Limited	July 28, 1882 .	2,880
The Thunder Bay Land and Mining Company	Dec. 11, 1883..	40,000
The Thornbury Oil and Mining Company	Nov. 12, 1886..	30,000
The Toronto Mining Association, Limited.....	Jan. 21, 1891..	3,000
The Taché Gold Mining Company of Ontario, Limited	Nov. 3, 1892..	500,000
The Toronto Nickel Company, Limited	Dec. 14, 1892..	300,000
The Trill Mining and Manufacturing Company, Limited.....	July 7, 1896..	1,000,000
The Temiscamingue Lithographic Stone and Mining Company, Limited	Mar. 20, 1896..	100,000
The Toronto-Tudor Mining Company, Limited.	Jan. 20, 1897..	1,000,000
The Thessalon Gold Mining Company, Limited.....	March 3, 1897..	800,000
The Toronto and Western Mines Development Company, Limited	Jan. 13, 1897..	50,000
The Union Mining Company	April 9, 1868..	60,000
The Union Jack Gold Mines Company of Foley, Ontario, Limited	Aug. 27, 1897..	150,000
The Victoria Gold Mining Company of Toronto	Feb. 17, 1868..	3,500
The Victoria Mining Company, Limited.....	Oct. 6, 1883..	500,000
The Vermilion Mining Company of Ontario	Feb. 21, 1888..	240,000
The Victoria Mining Company of Ontario, Limited.....	Dec. 2, 1896..	450,000
The Wilbur Mining and Manufacturing Company	Aug. 28, 1882.	200,000
The Wahnapitae Mining Company..... ..	Oct. 31, 1888..	30,000
The West End Mining Company of Ontario, Limited	June 28, 1889..	2,000,000
The Western Ontario Mining Company, Limited	Nov. 18, 1896..	1,000,000
The Wabigoon Free Milling Gold Mining Company, Limited ..	Feb. 17, 1897..	1,000,000
The Webwood General Mining and Development Company, Limited	March 23, 1897 .	490,000
The Willow Creek Gold Mining and Development Company of Brantford, Ontario, Limited.....	May 6, 1897..	99,000
The Walpole Ore Company, Limited	Oct. 15, 1897..	20,000
The Y. One Mining Company.....	Sept. 27, 1875..	1,000,000
The Yum Yum Gold Mining Company of Ottawa, Limited....	Dec. 24, 1896..	1,000,000
The Yankee Doodle Mining Company of Toronto, Limited	Sep. 22, 1897..	45.000
The Yellow Jacket Gold Mining Company of Seine River, Limited	Aug. 19, 1897..	90,000
The Yukon Mutual Mining and Exploring Company of Toronto, Limited.....	Oct. 6, 1897..	20,000
The Yukon Nugget Gold Mining and Exploration Company of Paris, Limited	Dec. 15, 1897..	250,000

Comparison of 1896 and 1897.

For the year 1896 the total number of mining companies organized in the Province was 26, and the total amount of their authorized capital was $15,600,000. In 1897 the number was 136, and the aggregate of their authorized capital was $98,356,000. Charters issued prior to April 13 were granted under the provisions of The Ontario Joint Stock Companies' Act, while those issued from that date were granted subject to the provisions of The Ontario Mining Companies' Incorporation Act, with powers to carry on in all their branches the operations of a mining, milling,

reduction and development company. In addition to the 136 companies incorporated under the Ontario statutes, four companies formed under the Imperial Joint Stock Companies Acts have secured licenses under the provisions of the Act for the Regulation of Mining Companies, viz.; The Canada Venture Syndicate, Limited with £20,000, The Canadian Pacific Exploration, Limited, with £500,000, The Northwestern Ontario Exploration Company, Limited, with £15,000, and The Ontario, Limited, with £100,000. This makes a total of 140 companies, with an aggregate authorized capital of $101,531,000, nearly all of which have been incorporated with the object of engaging in the mining business in Ontario. It is not likely that all of them will engage in actual work; the records of the last thirty years in Ontario show that many companies obtained charters and never exercised their powers in a practical way. But with the opportunities that are presented for mining enterprise in the northern and eastern districts of the Province, and with the spirit of venture that has seized hold of our people, the influence of so many new corporations must be noticeable in the progress of mining development during the present and succeeding years.

Mining Lands

Increase of transactions in 1897.

The activity which began to be shown in applying for and taking up mining locations during the last three months of 1896 was maintained throughout the whole of last year. Since its organization in 1891 the Bureau of Mines had administered the mineral lands in the surveyed portions of the Province, but owing to the extension of its work in other directions it became necessary last year to transfer the applications for these lands to the Sales Branch. The Surveys Branch was also strengthened by the employment of a number of extra clerks and draughtsmen; and although some relief was afforded by the opening of an office at Rat Portage, where applications from the Lake of the Woods were received and dealt with, it was with extreme difficulty that the requirements of the public could be met." The following table shows the number of locations sold during the year by districts, with their area and the amounts paid into the Treasury as purchase money :

District.	No. of Sales.	Acres.	$
Rainy River.....	442	26,739	53,985
Thunder Bay.....	9	917	2,160
Algoma	5	448½	747
Elsewhere	16	1,690	2,586
Totals	472	29,794½	59,478

The next table gives the statistics in the same way for mining locations leased during the year.

District.	No. of Leases.	Acres.	$
Rainy River.....	703	74,154	74,154
Thunder Bay.....	38	7,063	7,063
Elsewhere	42	4,797½	3,604
Totals	783	86,014½	84,821

Total revenue from Sales and Rentals.

The total number of locations sold and leased in the year was 1,255, with an area of 115,809 acres, for which the amount paid into the Treasury was $144,-299.06. But there was a further sum of $6,241.11 paid as rental on lands leased in previous years, and this makes an aggregate of $150,540.17. These figures do not include the receipts from the issue of mining licenses and other fees in connection with the staking out and recording of mining claims in the Michipicoton Division, the amount of which was $3,021.

A comparative statement.

This volume of business will be best appreciated when it is compared with the total transactions for the five preceding years, as shown in the following table :

	1892-96.	1897.
Number of sales	407	472
Acres	32,294½	29,794½
Price paid.....$	72,360 00	59,477 71
Number of leases	619	783
Acres	61,527½	86,014½
Rent paid ..... $	59,158 68	84,821 35
Rent of lands previously leased .....$	15,440 30	6,241 11

The number of locations sold and leased last year was greater than in the five previous years by 229, the area was greater by 21,987¼ acres, and the amount received exclusive of the rent of lands previously leased was greater by $12,780.38. Inclusive of the rent of lands previously leased, the revenue from mining lands last year was greater than for the five previous years by $3,581.19.

The transactions of each of the six years 1892-7 are given in the next table:

Year.	Locations sold.			Locations leased.			Rental of lands previously leased.
	No.	Acres.	$	No.	Acres.	$	
1892	65	6,200	15,273	95	13,122½	12,314 36	603 00
1893	63	4,370	11,489	122	13,046¾	11,933 90	2,735 86
1894	40	3,271	7,646	66	7,050½	6,488 78	3,807 78
1895	99	7,720	15,868	175	15,084	14,924 00	3,287 16
1896	140	10,733½	22,084	161	13,223½	13,497 64	5,006 50
1897	472	29,794	59,478	783	86,014	84,821 35	6,241 11
Totals	879	62,088½	131,838	1402	147,541¼	143,980 03	21,681 41

The total number of locations sold and leased in the six years 1892-7 was 2,281, the total area was 209,629¾ acres and the total amount received for sales and rents was $297,498.44. The popularity of the leasing system is shown by the number and area of locations taken up under it, the locations leased exceeding those sold in the six years by 523 in number and by 85,452¾ acres in extent. The revenue from rents was greater than the revenue from sales in the six years by $33,823.44.

Popularity of the Leasing system.

Mineral Production

Heretofore much delay has been caused in the preparation of the Bureau's Reports by the slowness with which returns of statistics have been made. Especially has this been the case with the statistics of stone quarries, lime kilns, brick yards and pottery works. This year no attempt has been made to collect the figures for these industries, and in the summary table which follows they do not of

Product	Quantity.	Value.	Employes	Wages.
		$		$
Cement, natural rock ..... barrels.	84,670	76,123	70	21,500
Cement, Portland ..... "	96,825	170,302	161	67,560
Pressed brick, plain ..... number.	7,148,908	53,727		
Pressed brick, fancy ..... "	895,000	9,350	143	40,084
Roofing Tile	35,000	400		
Terra Cotta	.....	35,800		
Paving Brick	4,567,880	45,670	66	23,226
Sewer Pipe	.....	73,551	64	19,600
Petroleum ..... imperial gallons.	25,556,591	.....	.....	.....
Illuminating Oil .. "	10,891,337	1,131,083		
Lubricating Oil .... "	1,959,810	199,755		
Benzine and Naphtha, "	949,341	77,340	364	196,356
Gas and Fuel Oils and Tar	8,021,633	281,035		
Paraffin Wax and Candles ..... lb.	2,139,278	88,378		
Natural Gas	.....	308,448	84	42,338
Calcium carbide ..... tons.[1]	574	34,440	30	12,544
Salt ..... "	54,686	249,880	210	58,530
Gypsum and products of ..... "	1,729	17,950	.....	.....
Graphite and products of ..... "	400	8,500	15	5,000
Iron ..... "	24,011	288,127	130	40,000
Nickel ..... "	1,999	359,651	535	253,226
Copper ..... "	2,750	200,067		
Gold ..... oz	11,412	190,244	430	212,966
Totals 1897	.....	3,899,821	2,302	993,530
Totals 1896	.....	3,794,003	1,822	818,726

[1] Net tons of 2,000 lb.

course appear. The total amounts are accordingly much less than in former years; but as shown by the detailed statistics hereafter given, and as appears by the comparative figures of totals for 1896 and 1897, some progress is being made.

Cement.

Gratifying progress of the Industry.

The cement industry is steadily winning its way forward in Ontario. Both the natural rock and Portland cements are showing a large increase of production, and manufacturers are establishing a good reputation for the qualities of the cements they are putting on the market. The increase however is not shown in the number of establishments, which are two less now than they were four years ago; but in number of men employed and amount of wages paid for labor, in quantity of cements produced and in their value there is gratifying evidence of progress. The following table gives the statistics of the industry for the four years 1894-97:

Schedule.	1894.	1895.	1896.	1897.
Natural rock cement—				
Number of works	5	5	5	4
Number of workmen	63	45	56	70
Wages for labor $	13,020	14,166	15,200	21,500
Product bbl	55,323	55,219	60,705	84,670
Value of product $	48,774	45,145	44,100	76,123
Portland cement—				
Number of works	3	2	2	2
Number of workmen	105	129	120	161
Wages for labor $	31,858	46,000	48,400	67,560
Product bbl.	30,580	58,699	77,760	96,825
Value of product $	61,060	114,332	138,230	170,302

The number of men employed in these four years has increased from 168 to 231, the wages paid for labor from $44,878 to $89,060, the quantity of cement manufactured from 85,903 barrels to 181,495 barrels, and the value of the cement from $109,834 to $246,425. The greatest increase however has taken place in the production of Portland cement, which has gone up from 30 580 barrels to 96 825, while the natural rock cement has only increased from 55,323 barrels to 84,670. In value natural rock cement shows an increase of $27,349, while Portland cement shows an increase of $109,242. This no doubt is largely if not chiefly owing to the growing interest in the building of good roads in our towns and cities.

All of the natural rock or hydraulic cement works are now situated along the Niagara escarpment, extending from Queenston near the Niagara river to Limehouse on the main line of the Grand Trunk Railway.

Natural rock Cement Works.

One of the Portland cement works is situated at Shallow lake in Grey county, where the business is carried on by the Owen Sound Portland Cement Company. New machinery was added during the past year, and new buildings and more kilns are now in course of erection which when completed early in the summer will bring the output up to over 300 barrels per day. The product of the works is known as the Samson brand, and the manager states that not a single complaint was received last year regarding the quality of the material put upon the market.

Owen Sound Company's Works.

Both the marl and the clay used in the manufacture of cement at these works are obtained from the bed of Shallow lake.

The works of the Rathbun Company at Napanee Mills were also enlarged last year, and they have now an estimated capacity of about 350 barrels per day. The plant embraces the latest and best developments in Portland cement making, and is constructed with a view to produce material of very uniform quality. The clay and marl are mixed in proportions carefully regulated by chemical analysis, and the slurry is so finely reduced

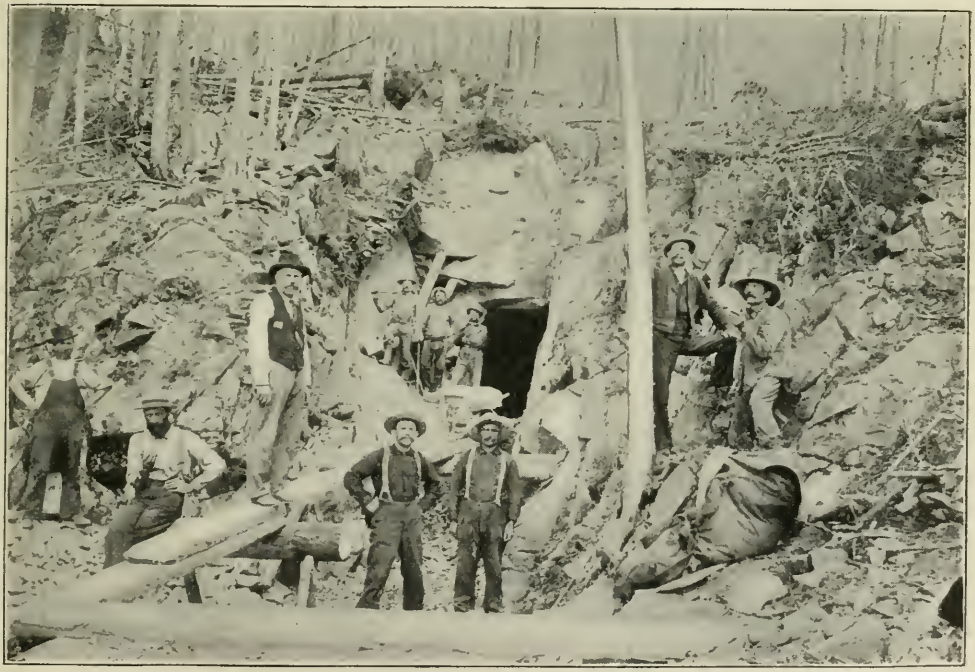
Rathbun Company's Works.

View of the Sultana Mine and Camp, p. 48.

Mikado Mine, p. 52, looking N.W., showing mill and main shaft house. Bag bay in the back ground with camps near the shore. Open cut on No. 1 vein is seen to the left of the mill. Hoisting engine house to the left of open cut. To the right of the mill in the foreground is the blacksmith shop, and behind it is the tramway running from the mill to No. 2 shaft.

Keewatin Reduction Works. Showing tramway for carrying ore from barges to works; river in the foreground and Railway track between it and works; office to the right, p. 60.

Crib of the Burley Mine. Built on the Company's island, about half a mile from Sultana island, p 49.



Tunnel on Gem vein, AD2 Mine, p. 74.

in the mixing mills that it will all pass through a seive of 100-mesh, or 10,000 holes per square inch. Two new burning kilns were erected last year, making three in all; they are of the continuous type and produce a very uniform well burnt clinker. In the grinding mill the clinkers are ground to an extremely fine powder, and so finished it is conveyed to bins in a new storehouse which has a capacity of 50,000 barrels. The Rathbun Company's cement is known as the Star brand, but they are now producing a quality called the Silica Portland. The marl for the works is drawn from an extensive deposit on the line of the Bay of Quinte Railway, and the clay from a property adjoining the works.

During the fiscal year ending June 30, 1897, Canada imported 210,871 barrels of Portland cement, valued in the Trade Returns at $252,587; so there is yet considerable room for expansion in the industry at home.

Brick, Terra Cotta and Sewer Pipe.

The slackness in the building trade still continues to depress the pressed brick industry, as shown by the following statistics for the seven years 1891-97:

Pressed Brick and Terra Cotta

Year.	Number.	Value.	Wages.
		$	$
1891.....	13,617,909	156,699	58,000
1892.....	22,048,000	259,335	88,865
1893.....	21,634,000	217,373	80,686
1894.....	25,456,000	286,230	95,400
1895.....	17,940,867	184,550	69,442
1896.....	12,201,000	129,845	60,824
1897.....	8,043,908	99,277	40,084

The numbers in this table include only plain and fancy pressed brick, while the values and wages paid for labor include in addition roofing tile and terra cotta—the last named embracing the architectural and porous varieties. The industry employed last year an average of 143 men, whose wage earnings were $40,084.

The manufacture of paving brick is now becoming an established industry, and it is claimed that the quality of brick now produced is equal to the best of the American made brick heretofore imported. The quantity turned out at the works last year was 4,567,880, valued at $45,670, in the production of which 66 workmen were employed whose wage earnings were $23,226. In Toronto paving brick is growing steadily in favor as material for the construction of streets and sidewalks, and the demand for it here and elsewhere is likely to continue.

Paving Brick.

In the manufacture of sewer pipe last year 64 workmen were employed, whose total earnings were $19,600, and the value of pipe turned out at the works is given as $73,551.

Sewer Pipe.

Altogether these three clay industries gave employment last year to 273 workmen, whose aggregate wages were $82,310, and the amount of the products of their industry was $218,498.

Petroleum.

Crude petroleum to the amount of 25,556,591 imperial gallons and valued at $1,067,128 was distilled in the Province last year, being in amount 397,352 gallons more but in value $55,980 less than in the previous year. Six distilleries were employed in treating the crude, viz., those of the Imperial Oil Company, the Bushnell Company, the Petrolia Crude Oil and Tanking Company, and the National Oil Works at Petrolia, the works of the Empress Oil Company at London and the works of the Bushnell Company at Sarnia. The latter however was operated only during the months of October, November and December.

Production of Crude.

The following table gives the distilled products of the six refineries for the year, and the value of each product:

Distilled products.

	Imp. gal.	$
Illuminating oil.....	10,891,337	1,131,083
Lubricating oil.....	1,959,810	199,755
Benzine and naptha.....	949,341	77,340
Gas and fuel oils and tar..	8,021,633	281,035
Paraffin wax and candles.lb.	2,139,278	88,378

The total value of refined products is $1,777,591, which is $710,463 more than the value of the crude petroleum. In 1896 the value of distilled products was $1,955,295, which was $832,187 more than the value of the crude. The percentage of appreciation by treatment in 1896 was 74 per cent. and in 1897 it was 67 per cent. The cause is thus

stated by the president of one of the companies: "The tariff changes reduced crude values, and reductions in articles entering into cost manufacture carried a relatively greater reduction in refined, and products generally." The main item of decrease is observed to be in illuminating oils, which in quantity were 451,543 gallons and in value $132,147 less in the latter year than in the former. There is little change to note in the cost of labor, the average earnings in 1897 being $540.83 and in 1896 $541.33. The average number of workmen employed last year was 364, being 13 more than in the previous year, and the total amount of wage earnings was $196,955.70.

Percentages of products from Crude.

The next table is interesting in so far as it indicates the improvements which are being made in the process of distillation—the proportion of refined products recovered from the crude.

Product.	1892. p. c. of crude.	1893. p. c. of crude.	1894. p. c. of crude.	1895. p. c. of crude.	1896. p. c. of crude.	1897. p. c. of crude.
Illuminating oil	38.67	39.12	41.10	43.31	45.08	42.62
Lubricating oil	12.35	12.45	10 91	9.51	9.07	7.67
All other oils.....	27.34	28.14	30.45	28.07	31 09	35.10
Totals.....	78.36	79.71	82.46	80.89	85.24	85.39

Since 1892 the percentage of all oils obtained by distillation has increased from 78.36 per cent. to 85.39 per cent., and saving one year the improvement has been continuous. Last year however the proportion of illuminating oils is less than in each of the two preceding years, and the proportion of lubricating oil is less than in any one of the five preceding years. In this latter there has been a steady decrease in percentages. But in all other oils there is a noticeable increase, the percentage having gone up from 27.34 in 1892 to 35.10 in 1897. There is a marked increase too in the wax product, which was last year 607,607 lb. more than in 1896.

The Bothwell Territory.

The Bothwell field has not realised the expectations entertained of it at the close of 1896, and a number of the wells have already been abandoned by operators. The total product of crude as given in the returns was 1,048,862 imperial gallons, valued at $43,099. The number of workmen employed, most of whom were engaged in drilling new wells, was 41, and the amount of wages paid for labor was $20,176. The Walker Oil and Gas Company drilled 32 wells during the year, all of which are reported as producing wells.

Exploiting a new Field in Dawn township.

A new oil field was exploited during the year in the township of Dawn, near the village of Florence. A number of wells were drilled in the latter part of the year, several of which gave good flows of oil. The pioneer in this territory is Mr John Doran of Toronto, a steamboat engineer, who claims that he located it with the help of an instrument or "rigging" during the trips of the steamer Cambria up and down the St. Clair river in the season of 1896. His first visit to the locality was made in January, 1897. "I had never been in this country, before," he writes from Florence under date of December 23, 1897, "having only passed through south and north of it on the trains, and hence knew absolutely nothing of it in any way. I got off the train at Bothwell, walked out northwest two miles, and found that the attraction was quite a distance northwest yet. So I walked back and took the stage to Florence, an inland town of 500 people nine miles northwest of Bothwell. Upon arriving there I followed the attraction northwest about 2½ miles, and after some time spent with farmers trying to lease I succeeded in leasing a tract for one year." In all about 2,800 acres was secured, and in August Mr. Doran returned to begin operations, having associated with him two men of Port Huron who possessed some capital. The first well was completed October 15 having been drilled to a depth of 342 feet, at

which point salt water was struck, and it has pumped an average of two barrels per day. It is on the southwest quarter of lot 19 in the thirteenth concession of Dawn. The second well, 300 feet southeast of the first, was bored to 317 feet, and yielded at first at the rate of 30 barrels per day. The flow fell off gradually to one barrel, when the borehole was deepened to 356 feet and it was shot at 290 feet. The pump was again put in and the yield was found to be 10 barrels per day, at which rate it continued. Eleven wells were bored by Mr. Doran and his partners before the close of the year, all of which were producers. "I cannot describe to you my instrument for locating oil," Mr. Doran writes, "but would be pleased to show it to you and the workings thereof here or in Toronto." The wells have since been sold to Dr. Fairbank of Petrolia for $11,000, and there are now a number of other oil operators on the ground.

Natural Gas.

Condition of the Natural Gas supply.

There is nothing new to note in connection with natural gas, except that the value of the output is larger than in any previous year. This is due no doubt to the greatly increased number of consumers following upon the laying of pipes under Detroit river to supply the citizens of Detroit. The territory, both in the Essex and Welland fields, continues to be about the same as in previous years, and although a number of wells were bored in both fields last year the number of producing wells continues to be very nearly the same—some of the old wells apparently having become exhausted. The following table gives the statistics of natural gas for the five years 1893-97:

The Welland and Essex fields compared.

The Welland field, which embraces parts of Haldimand, has in all 106 producing wells and 140½ miles of pipe line. Last year 10 new wells were drilled, only six of which were producers. The value of its yield of gas was $96,078, and the business gave employment to an average of 38 men throughout the year whose total wage earnings were $22,630. In the Essex field 46 men found regular employment, and the amount paid them for wages was $19,708. The length of pipe line in that county is 156½ miles, the number of producing wells 34, and the value of gas supplied to consumers was $212,370. Nine wells were bored during the year, three of which proved to be dry holes. It should be stated however that eight of the so-classed producing wells are sealed up, awaiting a market, and therefore the whole supply was drawn from 26 wells. The town of Leamington, which owns its own wells, derived from them last year a revenue of $12,000. It has now 11 miles of pipe line laid within the corporation to serve consumers.

Calcium Carbide.

In several previous reports the Bureau has devoted considerable space to the subject of calcium carbide and acetylene gas. The account given in the Report of 1894 of Willson's method of producing the carbide, patented in that year, led to a large degree of public interest in the new illuminant, which also held out so bewildering a range of possibilities as a foundation for many useful compounds.

In the report for last year some of the difficulties were enumerated which hindered the general adoption of acetylene gas for lighting purposes, but since that time much

Schedule.	1893.	1894.	1895.	1896.	1897.
No. of producing wells	107	110	123	141	140
Miles of gas pipe	117	183½	248	287¼	297
Workmen employed	59	99	92	87	84
Value of gas product...$	238,200	204,179	282,986	276,710	308,448
Wages for labor	24,592	53,130	73,328	47,527	42,338

progress has been made. Continued study of the properties of the gas and experiment with it have evolved apparatus of various types for its generation and control, and the result has been that acetylene is now being rapidly introduced as a means of indoor lighting throughout the Province of Ontario. The field which seems specially open for it is that afforded by the smaller towns and villages, where gas plants are not already in existence and where the electric light is used, if at all, only in the form of the arc lamp for illuminating public streets. Here a system of lighting is welcomed which does not necessitate an expensive central plant or a costly equipment of mains, and which does not require a large number of consumers to ensure a reasonably low cost. The advantage possessed by acetylene in this regard is, that it provides an isolated method of lighting, which can be adopted by one person in a town or village, or even by a farmer on his homestead, without reference to any one else and without increase of cost. This feature of acetylene lighting has doubtless in large measure been the cause of the favorable reception it has had in Ontario during 1897.

Adoption of Acetylene Gas for Lighting purposes.

There are now eight firms engaged in manufacturing acetylene generators in the Province, as follows: J. Wallace & Sons, Hamilton, The Niagara Falls Acetylene Gas Machine Company, Niagara Falls, Leishman & Maundrell, Woodstock, The Hamilton Acetylene Gas Machine Company, Hamilton, The Guelph Acetylene Gas Machine Company, Guelph, The Acetylene Lighting Company, St. Mary's, The Acetylene Lighting Company of London, Limited, London, and the Welland Acetylene Gas Machine Company of Welland. One of these firms reports having placed 94 of its machines since January, 1897, mostly in Ontario, but several also in the United States and Mexico. The plants range in size from 15 to 100 lights. They are used for the lighting of stores, churches, manufactories, rinks, and dwelling houses. Another firm mentions a few of their principal patrons, 35 in number; a third firm enumerates 55 places in which they have set up 186 machines, ranging in size from five to 150 lights, but having a total of 4,535 lights. The majority of these generators were put up in Ontario, mainly in the smaller towns, but a number of them went to other Provinces of the Dominion, among them 41 to Winnipeg, while 10 are said to have found their way to Klondike. A fourth firm could give "an endless list" of their customers, if desired, but furnish 15 only, among whom are five churches and one Government institution; a fifth sends the names of 18 users of their machines. From the fact that acetylene has so far been introduced mainly outside of cities and towns having gas plants already in operation, it is probable that it has taken the place of coal oil in the majority of cases, and to a smaller extent that of the electric light.

Manufacturers of Acetylene Generators.

As to the cost of installing the light, this varies with the style and capacity of generator employed. One of the firms named above quotes its prices for the several sizes as follows: 15-light $40, 25-light $45, 35-light $50, 45-light $55, 60-light $70, 65-light $85, 100-light $115, 150-light $145. On the other hand the Springfield Acetylene machine, made in Springfield, Mass., is advertised to sell at prices ranging from $125 for a 10-light machine to $450 for a 100-light one. This Springfield generator is situated wholly underground, which it is claimed reduces the danger and offensive smell to a minimum. Plants of other make are usually situated in the basement or cellar of the building which they are intended to serve.

Cost of installing Light Plants.

As to the cost of operating the light plant, this is dependent almost wholly upon the cost of the carbide of calcium, as the only other ingredient used in producing the gas is water. The carbide used in Ontario is manufactured wholly by the Willson Carbide Works Company of St Catharines, and costs three cents per pound, or, allowing for freight, about 3½ cents. Messrs. J. Wallace & Son of Hamilton state that by actual experiment and photometric test with carbide at $60 per ton, the cost of the acetylene gas has been found to be 12 cents per 1,000 candle power hours. The Niagara Falls Acetylene Gas Machine Company state that in practice with carbide at 3½ cents per pound they find they can

Cost of operating a Plant.

produce a full 36-candle power light at a cost of three-eighths of a cent per hour. The Acetylene Lighting Company of London write that in their experience acetylene gas costs about $6 per 1,000 cubic feet, or one cent per hour for 85 candle power; while the Hamilton Acetylene Gas Machine Company quote the words of their agent at Wyoming: "We started a B. & J. machine on 30lb. of carbide and kept a close watch on it, finding as a result that it gave 160 hours' light of 50 candle power. This reduced to cost means 320 hours' light of 25 candle power, at a cost of 90 cents, or $\frac{7}{25}$ of a cent per hour for 25 candle power light." These several estimates vary a little, but not much.

Acetylene Gas and Coal Gas compared as to Cost.

By the law of Canada (Consolidated Statutes, 1886, chap. 101) the quality of illuminating gas must be such that the light produced by a standard burner consuming five cubic feet of gas per hour shall be equal in intensity to that produced by 16 sperm candles of six to the pound, two candles being used together. Taking the estimate of the Hamilton Acetylene Gas Machine Company, as given above, to be approximately correct as to the quantity of light produced, and assuming the cost of carbide to be 3½ cents per pound, a comparison with illuminating gas equal to that furnished the citizens of Toronto, which is stated to be of 20.18 candle power, would work out as follows: One thousand cubic feet of coal gas burning for one hour would give 4,036 candle power and cost 90 cents (Toronto price), while 1,000 cubic feet of acetylene burning for one hour would give 53,333 candle power and cost $7.50. Ninety cents worth of acetylene would yield 6,400 candle power as compared with 4,036 candle power given by coal gas; hence acetylene at $7.50 per 1,000 cubic feet is about equal in cost to 20.18 candle power coal gas at 57 cents per thousand feet. Or the comparison may be stated thus, taking the price of carbide to be three cents per pound as in the Wyoming experiment: Toronto gas costing 90 cents gives 4,036 candle power, and acetylene gas costing 90 cents gives 8,000 candle power, the ratio of efficiency being 100: 198. This result may or may not be always borne out in actual use; but if ever the cost of carbide is reduced to $20 or $10 per ton, as may be possible when unlimited power is available to generate electricity, there can be then no doubt on the question of relative cost. Inquiry made from some of the users of acetylene however brings out the fact that even under existing conditions it is considered economical as well as satisfactory. Knox church in Goderich may be taken as an example. The plant was installed when the building was re-modelled and enlarged in the summer of 1897. A 60-light machine, including 100 burners, was put in at a cost of $170. The carbide costs 3⅓ cents per lb. delivered; 17 pounds supplies 82 lights with gas for two hours at a cost of about 55 cents. Since there is a short period of the year when little or no light is required, it is calculated that the expense of lighting the church, the auditorium of which measures 90 feet by 60, is about $25 a year. "The gas," a member of the congregation says, "gives great satisfaction, many expressing the opinion that while the light is a very brilliant, white light, it has none of the dazzling effects felt from electric light, and is much softer and easier for the eyes."

Explosive properties of Acetylene.

The only other point as to which some uncertainty exists is the explosive properties of the gas. In the liquified form acetylene is certainly a substance requiring to be handled with care, but in its gaseous state it does not appear to be much more liable to explode than ordinary coal or water gas. The manufacturers of generating machines say there is but one way in which trouble can be caused, and that is by opening the generator while holding a light in the hand, and then only when the acetylene lights are in use, as generation of gas ceases almost immediately upon the turning out of the lights, owing to the automatic action of the machine removing the water from contact with the carbide. All machines are constructed with a waste pipe running into the open air, so that any surplus gas is conducted outside of the building. Explosions have taken place, but so far as can be learned not in greater proportion than similar accidents with other illuminating gas. One of the previously mentioned

firms states that they exploded about 12 cubic feet of acetylene in a gasometer, and merely succeeded in making a pretty loud report and throwing the gas holder out of the water. "We have frequently exploded smaller quantities," they say, "and in one case exploded about four feet or possibly five feet in a small room in which the ceiling was hung with cobwebs. The cobwebs were not even singed, so we cannot see much danger of fire." The danger of asphyxia is less than with coal gas, for the reason that the burners, which are of a special kind, allow only from half to three-quarters of a cubic foot per hour to escape, while an ordinary coal gas burner passes from five to seven cubic feet per hour. Assuming the poisonous properties of the two gases to be equal, it is evident that the practical danger is much greater in the case of coal gas. Besides this, the very disagreeable and penetrating odor of acetylene would give unmistakable notice of a leak.

Production of Carbide in Ontario

The product of the Willson Carbide Works Company during the thirteen months ending December, 1897, was 574 tons of calcium carbide, valued at $34,440, or $60 per ton, and stated to be the equivalent of 86,053,725 cubic feet of coal gas. Of this quantity 745,817 lb. was exported, and 401,566 lb. was sold for consumption in Canada. The local use of the article is rapidly growing, as the following statement of the monthly sales of last year by the company for home consumption shows :

January	9,361 lb.
February	7,529 "
March	9,018 "
April	3,305 "
May	9,175 "
June	9,920 "
July	3,362 "
August	16,110 "
September	22,660 "
October	95,000 "
November	87,787 "
December	118,125 "

To produce 574 tons of calcium carbide, 768 tons of coke and 903 tons of lime were used, the value of the former being $2,646.37, and of the latter $2,707.39. The average number of workmen employed at the works was 30, and the amount of money paid out for wages during the year was $12,544.62. The works are situated on the old Welland canal at Merritton, and power is procured from the three locks of the canal. The third lock was completed and put in operation January 15, 1898, thus placing 1,200 horse power in all at the service of the works. A short description of these was given in the Report for 1895

Peat Fuel.

The prospect of supplying Ontario with a cheap and good fuel made from the peat bogs of the Province has been referred to in several of the reports of the Bureau, and it has more than once seemed as if the hope of accomplishing this most desirable object were about to be realized. Those who are at all familiar with the history of attempts to manufacture a satisfactory fuel from peat know something of the peculiar diffculties with which such attempts have been beset, and will scarcely wonder if the progress made has seemed slow. Persevering efforts have been maintained by those engaged in the business to overcome defects in the process of manufacture, and the press which Mr. A. A. Dickson, of the Canadian Peat Fuel Company, Limited, Toronto, has recently perfected, gives promise of an ultimate solution of the peat fuel question. As seen at work at the company's office, 110 Adelaide street west, Toronto, this press consists substantially of a solid, upright, iron frame enclosing a geared shaft on which revolve two eccentric pulleys attached to plungers or pistons. With each revolution of the shaft these descend into corresponding hollow tubes or moulds about 12 inches long, and carry with them a charge of powdered peat, forcing it into the tubes under a pressure of about 30 tons. The friction exerted upon the peat by the tubes holds the charge or compressed block tightly in place and prevents it escaping from the open bottom of the tube until another block is formed and pressed down upon it, when it is thrust out a finished piece of fuel in the form of a cylinder two inches in diameter and from two to three inches long. To sustain the great pressure

Canadian Peat Fuel Company. Dickson's Press.

to which they are subjected the tubes require to be made of the toughest and most wear-resisting material. Nickel-steel has been found to combine the necessary qualities where other metals, such as phosphor-bronze, have failed. The only preparation that the peat receives before going into the press is sun-drying on the surface of the bog from which it is cut, and subsequent reduction to powder in a machine resembling the cylinder of a threshing machine, with this difference, that the teeth are not rigid, but are loosely attached to the ribs of the cylinder, thus allowing them to encounter stones or other obstructions without injury. The speed at which they revolve gives them sufficient force to break up the peat. No artificial heat is used at any stage of the process. The fuel thus formed is hard and compact, having a specific gravity slightly less than anthracite coal, and a fuel value claimed to be about equal to bituminous coal. The company own a large bog in the townships of Humberstone and Wainfleet on the Welland Canal feeder, and purpose manufacturing peat fuel extensively therefrom during 1898. They will also make moss litter from the surface layers of the bog, for which purpose a manufacturing plant is already on the spot.

Some experiments with moss litter as a preservative packing material were made in 1897 by Mr. Alexander Jardine, of Toronto. Mr. Jardine made three shipments of fresh fruit thus packed to England, consisting of pears and tomatoes. The first shipment was made in cold storage to Manchester, and turned out very well indeed. The fruit arrived in excellent condition, and meeting a good market it realised a handsome profit. The second shipment was made by freight to Bristol, and though it survived the voyage in fairly good order, was sold at a loss. The third consignment was not in first-class condition on leaving Canada, and when it reached England was totally spoiled, resulting in an entire loss. An objection was made by the merchants who bought the second lot that the fragments of moss and dirt in the fruit injured its sale in competition with the bright, fresh fruit from the continent. Mr. Jardine has also recently made several test shipments of fresh fruit packed in moss to the West Indies, the results of which he has not yet learned. He believes that moss litter as a packing material will be found suitable for tomatoes, the moss fragments not injuring their sale to any appreciable extent, but on the whole is inclined to doubt whether it will prove successful on a commercial scale for the other kinds of fruit.

Experiments with Moss Litter as packing material.

Apatite.

The returns received from the owners of apatite mines show that all of them were idle during the year. At the superphosphate works at Smith's Falls 300 tons of mineral superphosphates was made, the value of which is given as $4,800. The industry gave employment to two men, whose wage earnings were $900. At the same works a large quantity of bone superphosphates is manufactured, and no doubt the amount of apatite required would be much greater than it is but for the fact, as stated by the manager of the works, that the Fertilizer Act operates against mineral superphosphates.

Graphite.

The graphite trade last year did not realize the expectations entertained of it, owing in part to inactivity in the American market and the difficulty of gaining access to it. The Black Donald mine in Brougham township was worked only to the extent of 300 tons, and of this quantity 100 tons was milled at the new works of the Ontario Graphite Company at Ottawa. The industry gave employment at the mine and mill to an average of fifteen men, and the amount of wages paid for labor was $5,000. The graphite, as prepared for the market, is valued at $4,000, and the untreated ore at $3,000, making a total of $7,000 for the output of the mine and mill.

Mica.

Several mica mines were worked during the year, mostly in the way of development, and the returns received show an output of only thirty tons.

A short description was given in the Bureau's report for 1895 of the process by which the Mica Boiler Covering Company,

Limited, of Toronto, convert the scrap or waste cuttings from mica mines and works into material for the covering of boilers, steam pipes, etc., the object being to prevent the loss of heat by radiation. Other coverings made of magnesia, asbestos, etc., are sold for the same purpose at lower rates, but the merits of this article are winning for it an increased amount of business every year Amber and white mica are the varieties preferred, and as the size of the pieces is of no consequence—even the powder made in the course of manufacture being now utilized by a newly patented process—the business provides a market for material which has hitherto been absolutely valueless. About 140 tons of scrap mica were used by the company during 1897, the total value of the goods manufactured being about $10,000. An average of twenty men are employed, the amount paid out for wages being about $4,500. The company state that they are now not only competing successfully with imported coverings, but are exporting their goods to England and elsewhere. Their sales during the last six months of the year exceeded those of the first six months by 128 per cent.

Mica covering for steam pipes, boilers, etc.

Salt and Gypsum.

Eleven salt works were in operation last year, one in Bruce county, six in Huron, one in Middlesex, two in Lambton and one in Essex. The last of these is now the largest in the Province, and gives employment to 70 workmen. The following table shows the quantity and value of the salt production of the Province for the six years 1892-97 :

Production of Salt.

Schedule.	1892.	1893.	1894.	1895.	1896.	1897.
Tons made	43,387	48,450	35,215	51,009	44,816	54,686
Value.....$	162,700	149,850	115,551	188,101	204,910	249,880
Wages	37,800	44,440	43,350	56,496	50,650	58,530

Last year's figures exceed those of any of the previous years in quantity and value, as well as in wages paid for labor. The average number of workmen employed was 210, being 37 more than in the previous year, and the average wage earnings was $279, or $13 less than in the previous year. The average value of salt per ton was $4.56, and in 1896 it was $4.57. In 1893 the average value was only $3.09, but a much larger quantity of dairy and table salt is being produced now than then. The total quantity of fine salt manufactured last year, including table and dairy salts, was 43,468 tons, valued at $212,578 or $4.89 per ton. In 1893, when the production of fine salt was 39,150 tons, the average value was only $3.15.

The production of gypsum last year was only 2,471 tons, valued at $5,491. The average number of men employed at the mines was eight, and the wage earnings paid was $1,940. Nearly all the work was done by contract. In the treatment of raw ore 1,500 tons was converted into calcined plaster, valued at $6,500, and a quantity was manufactured into alabastine and plastico, valued at $11,450. The total value of the manufactured product was therefore $17,950.

Production of Gypsum.

Pig Iron.

The iron furnace at Hamilton was out of blast from the beginning of 1897 until June 28. On that date it was blown in, and the campaign has been maintained to the present time. From June 28 until December 31 the total product of the furnace was 24,011 net tons of pig iron, valued at the works at $288,128 To produce this quantity of iron there was smelted 37,492 tons of ore and 5,350 tons of scale and mill cinder. The quantity of limestone used for flux was 9,473 tons, and the quantity of coke for fuel 27,810 tons. The

Record of the Hamilton blast furnace.

statistics of the furnace for the two years 1896 and 1897 are as follows :

	1896.	1897.
Ore smelted .....tons	51,138	37,492
Scale and mill cinder.... "	5,883	5,350
Limestone for flux..... "	8,657	9,473
Coke for fuel..... "	30,348	27,810
Pig iron product..... "	28,302	24,011
Value of product..... $	353,780	288,128
Wages for labor..... "	47,000	40,000
Average workmen.....	125	130

The quantity of American ore used at the furnace last year was 34,722 tons, as against 35,868 tons in the previous year.

Exploiting for Ontario Ores.

The supply of Ontario ores was procured from the county of Hastings, chiefly from the old hematite mine in Madoc, but magnetic ores are now being taken from the Malone mine on the line of the Ontario Central Railway and from Calabogie on the Kingston and Pembroke Railway. About 2,000 tons has recently been received from the latter place. Some development work was done last year on properties near Desbarats station on the Sault Ste. Marie branch of the C. P. R., but the ore was found to be low grade at the surface and work was suspended until tests can be made with a diamond drill. At the present time a force of miners under charge of Mr. Barnes is opening a deposit of hematite at Algoma Mills. The ore is said to be of fine quality, running 58 per cent. of iron, but no shipments will be made until the season of navigation opens. The ore body lies alongside deep water on Lake Huron.

Copper and Nickel.

By the Canadian Copper Company and the Trill Mining and Manufacturing Company mining and smelting operations were carried on in the Sudbury district last year, the former having three furnaces in blast and the latter one. The furnaces of the H. H. Vivian Company were also in blast, having been rented by Joseph Wharton of Philadelphia, but the mines of the company were shut down. Besides these, work was carried on in the latter part of the year on a copper property in the township of Gould, on the Mississaga river. In September a large location upon which some work had been done by the former owners in 1896 was acquired by Joseph Powers, C.E., of Lansingburg, N.Y., on behalf of a syndicate of capitalists, and in the last three months of the year a force of miners was employed upon it. A camp of six houses was established, an engine, hoisting plant and air compressor were put in at the works, and by the close of the year the shaft had reached a depth of 100 feet on the vein, with drifts of 25 feet each way at the bottom. At the surface the vein has a width of three feet, and at the bottom of the shaft it is eight feet. The ore is said to run about eight per cent. copper, but in places it is much richer. It is the intention of the syndicate to continue sinking and drifting, and, if the ore is found in paying quantities, to build a concentration plant in the spring. There is fine water power on the Mississaga river convenient to the location, which the syndicate proposes to develop electrically in connection with their works.

Mines and Works in operation.

The following table gives the output of the Sudbury mines for the six years 1892-97, together with the quantity of ore smelted, and the per cent. of its metallic contents :

Ores mined and smelted in the six years 1892-7.

Year.	Ore raised, tons.	Ore smelted, tons.	Per cent. of metallic contents in ore smelted.		
			Nickel.	Copper.	Cobalt.
1892.....	72,349	61,924	3.36	3.19	.1007
1893.....	64,043	63,944	2.21	2.38	.0800
1894.....	112,037	87,916	2.92	3.14	.0721
1895.....	75,439	86,546	2.67	2.73	.....
1896.....	109,097	73,505	2.67	2.54	.....
1897.....	93,155	96,093	2.08	2.86	.....

The quantity of ore smelted last year was larger than in any previous year, and while the percentage of copper is higher than in any year but two of the period, the percentage of nickel is l ss than in any year. No cobalt has been produced since the closing of the Dominion Mineral Company's works in 1894. The total quantity of ore raised at the mines in the six years is 526,120 tons, and the quantity smelted 469,928 tons. It must not be assumed, however, that the difference of 56,192 tons represents the quantity of ore on hand in the stock piles, as allowance must be made for loss of weight in the roast heaps.

Labor statistics of the Mines and Works.

The next table gives the labor statistics of the mines and works for the same period of six years:

The total amount paid for wages is $1,614,393, and the average number of workmen employed has been 551, including 11 between the ages of 15 and 17 who were all employed above ground. The average of workmen above ground has been 386 and under ground 165. Under the Mines Act no girl or woman can be employed at mining work in or about a mine, and no boy under 15 years of age can be employed below ground.

Comparative Statistics of the Industry for six Years.

In the table which follows comparative statistics of the industry are given for the six years, showing ore raised and smelted for each year, matte product and its metallic contents, with value of metals in the matte computed at the selling price at the works, amount of wages paid for labor and average number of men employed:

Year.	Workers of 15 to 17 years		Workers over 17 years		Total workers.	Total wages.
	above ground.	under ground.	above ground.	under ground.		
						$
1892	10	.....	483	197	690	339,821
1893	10	.....	356	129	495	252,516
1894	17	.....	395	243	655	311,719
1895	7	.....	341	96	444	209,960
1896	8	.....	297	180	485	247,151
1897	12	.....	379	144	535	253,226

For the six years the average rate of wages per year has been $488.62, and for 1897 it was $473.32, or $15.30 less than the average.

Schedule.	1892.	1893.	1894.	1895.	1896.	1897.
Ore raised.....tons	72,349	64,043	112,037	75,439	109,097	93,155
Ore smelted..... "	61,924	63,944	87,916	86,546	73,505	96,094
Ordinary matte .... "	6,278	7,176	10,410	12,525	9,733	13,706
Bessemerized matte. "	1,880	452	1,470	103½	.....	328
Nickel contents[2].... "	2,082	1,653	2,570½	2,315¾	1,948½	1,999
Copper contents.... "	1,936	1,431	2,748	2,365½	1,868	2,750
Cobalt contents..... "	8½	19	3¼	.....	.....	.....
Value of nickel[2].....$	590,902	454,702	612,724	404,861	357,000	359,651
Value of copper..... "	232,135	115,200	195,750	160,913	130,660	200,067
Value of cobalt..... "	3,713	9,400	1,500	.....	.....	.....
Wages paid..... "	339,821	252,516	311,719	209,960	247,151	253,226
Men employed.....	690	495	655	444	485	535

[2] These are the figures of quantity and value of nickel product supplied to the Bureau by the mining companies, but they are much less than the figures of the Trade Returns of the Dominion Government, which are assumed to be based on sworn statements in the export entries. The owners or shippers of goods consigned to a port or place out of Canada are by the Customs Act required to make entry at the Custom House nearest to the place of lading of the kinds and quantities of the articles laden by them for export and to verify the same by oath. "Such entries," the Act reads, "shall specify the kinds and quantities of the articles shipped by them respectively, and

The matte product of the smelters in the six years is 64,061½ tons (59,828 ordinary and 4,233½ bessmerized), being 13.84 per cent. of the ore as delivered to the furnaces. The other 405,867½ tons represents the gain in freight between shipment in the form of matte and in the form of roasted ore. A portion of it has escaped into the air in a gaseous state, but the bulk of it has gone to make the slag pile. The metallic contents of the matte for the six years is computed to be 12,568¾ tons, or 25,137,500 lb. nickel, 13,098½ tons or 26,197,000 lb. copper, and 30¾ tons or 61,500 lb. cobalt. The values, which are based on the selling price of the matte at the works, are $2,779,840 for nickel, $1,034,725 for copper, and $14,613 for cobalt, or a total value in the six years of $3,829,178. The labor cost of these products, as already pointed out, is $1,614,393, which apportioned according to values would give $1,172,049.32, or 4⅔ cents per pound as the cost of nickel, $435,886 or 1⅔ cents per pound as the cost of copper, and $6,457.57 or 10½ cents per pound as the cost of cobalt—that is to say, the labor cost of producing them in the form of matte.

Comparative Values of Metallic Contents.

The next table gives the comparative values of the metallic contents of the matte based on the selling price at the works:

Year.	Nickel		Copper		Cobalt	
	per ton.	per lb.	per ton.	per lb.	per ton.	per lb.
	$	cents.	$	cents.	$	cents.
1892	283 81	14.190	119 90	5.995	436 82	21.841
1893	275 08	13.754	80 50	4.025	494 73	24.736
1894	238 36	11.918	71 23	3.561	461 54	23.077
1835	174 83	8 741	68 02	3.401	.....	.....
1896	183 22	9.166	69 94	3.497	.....	.....
1897	179 91	8.995	72.75	3.637	.. ..	.....

The prices of both nickel and copper have fallen almost steadily from 1892 to 1897, and these prices bear a close relationship to those of the refined metals. The average of nickel in the six years has been 11.058 cents, of copper 3.950 cents, and of cobalt 23.760 cents per pound in the form of matte, and in the case of each metal the cost of labor is less than one-half—ranging from 42 to 44 per cent.

Where the Nickel and Copper are refined.

The whole of the matte produced at the smelting works of the Sudbury district is sent out of the country to be refined, there being no refineries of nickel and copper mattes in Canada. The great bulk of it at present goes to the Orford Copper Company's works at Constable Hook, N.J., and a small portion to the works of Joseph Wharton at Camden in the same State. The cost of refining cannot be accurately stated, but it is about 9½ cents per pound for shot or plate nickel and 6 cents for nickel oxide, while for fine copper it is about 3½ cents per pound, or about double the labor cost of producing the matte.

Value of the Fine Metal products.

Computed at the present selling prices of nickel and copper in the American markets, the value of nickel and copper produced from the ores of the Sudbury mines in the past six years would be for nickel $8,798,125, and for copper

the total quantity of each kind of article"; and "that the values of such articles are truly stated according to their actual cost or the value which they bear at the port and time of exportation." The following table compiled from the Trade Returns gives by quantity and value the exports from Canada of fine nickel contained in ore, matte or speiss in the six fiscal years 1892-97:

1892	lb.	15,233,028	$617,639
1893		8,924,000	427,557
1894		8,411,276	808,799
1895		8,042,586	599,568
1896	lb.	6,996,540	$486,651
1897		7,527,472	498,515
		55,134,902	$3,438,729

The fiscal year of the Dominion ends on June 30, but allowing for the difference of six months between the fiscal and calendar years there is still a very large discrepancy between the returns made to the Bureau and those made to the Department of Trade and Commerce in the six years—those of the latter exceeding the former by more than 100 per cent. in quantity and by nearly 25 per cent. in value.

$2,947,162, or a total of $11,745,287; but for a portion of the period the selling price of nickel has been much higher than it now is.

The American Tariff on Nickel.

Without at all touching the delicate subject of tariff policies, it may be allowable here to note the course of United States legislation on the nickel duties for the past thirty-six years. In 1861 nickel was on the free list. In 1862 it was made subject to a duty of 10 per cent. ad valorem. In 1870 a specific duty of 30 cents per pound was imposed, which in 1872 was reduced by 10 per cent., but in 1875 the former rate was restored. In 1883, under the Morrill tariff, nickel in ore, matte or other crude form not ready for consumption was taxed 15 cents per pound, as was also fine nickel, nickel oxide, or alloy of any kind in which nickel was the element of chief value. Mr. Wharton's mine at Lancaster Gap was exhausted soon after the passage of the Morrill tariff, but diligent search was kept up for ores in North Carolina and other States of the Union, including Missouri and Oregon. In 1890, when the McKinley tariff was framed, the rate on nickel, nickel oxide and alloy of any kind in which nickel was the component of chief value, was reduced to 10 cents per pound, but ores of nickel and nickel matte were placed on the free list. The reason for so doing was subsequently stated by Mr. McKinley himself in these words, made under oath: "It was very doubtful whether we had any considerable quantity of nickel in this country. That is, we had nickel mines in Pennsylvania, the one owned by Joseph Wharton nobody questioned but that it was about mined out, and as there seemed to be none in this country, on the principle we we were framing the Bill we either would put it on the free list or reduce it to a revenue tariff. And I think the Committee were pretty well satisfied that it was very doubtful whether we had any nickel, at least not in quantities in the United States; and we understood that there were great mines in Canada." In 1894, by the Wilson tariff, ores of nickel and nickel matte were put on the free list, and the duty on nickel, nickel oxide and alloy of any kind in which nickel is the component material of chief value was further educed to six cents per pound. The Bill as it passed the House placed ore, matte, fine metal and all alloys of it on the free list, but the Senate made fine nickel and its alloys again dutiable. The Dingley tariff of last year left ore and matte on the free list as before, although a strong effort was made in the interest of owners of deposits in Oregon to impose a duty. Item 185 of the tariff reads: "Nickel, nickel oxide, alloy of any kind in which nickel is a component material of chief value, in pigs, ingots, bars, or sheets, six cents per pound." From this brief record it will be observed that as regards nickel ore and matte, nickel alloys and refined nickel, the American tariffs have been studiously framed for the promotion of American interests. It was only when they could no longer hope to procure the raw material in their own country that they agreed to place ore on the free list; but while doing so they maintained a prohibitory rate upon the refined metal and its alloys. By the Morrill law of 1883 nickel-steel containing only three per cent. of nickel was made subject to a tax of $300 per net ton, by the McKinley law of 1890 the tax was made $200 per ton, under the Wilson law it was $120 per ton, which is continued under the Dingley law, and the lowest of these rates is prohibitory.

Gold.

Statistics of six Years.

The working gold mines of the Province during the past six years supply the following statistics of men employed, ore treated, gold product by weight and values and wages paid for labor (p. 29).

Operations of the Mills.

None of the mills connected with the mines were running the whole year and only two or three of them ran day and night when in operation. The old mill at the Sultana mine was idle for some time during the construction of the new one, and when working it treated only low grade ore. The Mikado mill was not started until August, and the Regina and Foley, while not running continuously during the year, were worked only twelve hours per day. All the other mills, except the one of the Canadian Goldfields, Limited, were in operation for a few weeks each towards the end of the year. Four out of the nine mills are connected with mines in which a considerable amount of development has been done, although in the

case of three of these it was late in the year before compressor drills were supplied to take the place of hand drills in the workings. Yet these four mills show a substantial excess of gold value over the cost of labor. In the other five mines a large amount of development work had to be done, which is properly a charge against capital, but it is difficult to procure returns from which a correct classification can be made of charges against capital and production.

Schedule.		1892.	1893.	1894.	1895.	1896.	1897.
Mines worked	number	9	15	4	8	8	9
Men above ground	"	85	112	40	126	103	222
Men under ground	"	40	56	52	111	86	216
Ore treated	tons	3,710	5,560	2,428	6,500	13,292	27,589
Gold product	oz.	.....	1,695	2,022½	3,038	7,154	11,412
Gold value	$	36,800	32,960	32,776	50,781	121,848	190,244
Wages paid for labor	"	22,750	49,027	38,032	56,234	91,210	217,766

The total quantity of ore treated in the six years was 59,079 tons, and the total yield in bullion is valued at $465,509, being an average of $7.90 per ton. This appears to show that the ore is low grade, but as in the stages of development not much pains is taken to select the ore sent to the mills, it is probable that better results will be obtained when the mines are efficiently opened up. The fact that at nearly all the mines, such as the Sultana, Regina, Mikado and Foley, the shafts and workings prove the veins to increase in width as depth is attained, encourages the hope that immense ore bodies are available, and if this is found to be the case an average of $7.90 per ton of free milling ore is ample for the building up of a great gold mining industry. At the Hammond Reef mine there is no doubt whatever of the existence of an ore deposit of enormous extent, and there are several others in the region of the Upper Seine, as well as in the vicinity of Lake of the Woods, near Jackfish bay on lake Superior, in the country north of lake Wahnapitae, and in the county of Hastings, on which the reports are quite as favorable as on the Hammond Reef.

Averages of Gold production.

The weight of the bullion product is given in the table only for the five years, 1893-97, and for three years the average per ton is .4572 oz. The value per ton in fine gold in the same period is $7.74, and the value of an ounce of gold by the returns is $16.93 or .819 of fine gold. Discussion has taken place recently on the basis to be adopted in publishing the weight of bullion as returned by the gold mills, some writers strongly contending that the only proper basis is fine gold. But there is something to be said in support of the other view. It is worth knowing what the quality or degree of fineness of the gold of any particular mine or of the mines of a district is as determined by its mint value; and having its weight as produced and the mint value it is a simple matter to calculate the equivalent quantity in fine gold, whereas if the latter only is given with the mint value no calculation can be made of the former.

Weight and value of Bullion.

Only partial returns have been collected of gold properties in process of development, and no estimate can be formed of the cost of the work done. In some cases the labor expended has reached $8,000 to $10,000 during the past year, and the whole amount must be large. The reports of the Inspectors show that development operations have been carried on upon nearly fifty locations.

Properties in course of Development.

Mining Accidents

Mining accidents involving 22 men in all were reported to the Bureau of Mines in 1897, a number much in excess of the previous year. The increase was doubtless due partly to the greater amount of mining and development work being carried on, but also in part to a more general observance by mine owners of those provisions of the Mines Act which require notice of all mining accidents, whether small or great, to be sent to the Bureau of Mines.

General causes of Accidents.

Fortunately the majority were not of a grave character, only one being fatal, while a number were comparatively trivial in their nature. They may be classified as to their importance in the following way: 1 fatal, 9 serious, and 12 slight.

At the Hammond Reef Mine.

On January 15 four men working on Mining Location 318X at Sawbill lake, in the employ of Mr. James Hammond, were injured by an explosion of dynamite, their names being Joseph Drainville, Edward Durahme, William Potreau and Edward Duchon. The men were preparing to thaw out some frozen dynamite in a can or thawer which had been used for the purpose before. It is thought that some nitro-glycerine had run out of the dynamite into the sawdust at the bottom of the can when previously used, and when the supposedly empty vessel was placed on the fire to melt some ice which was adhering to the bottom, an explosion took place. Drainville and Durahme had each one leg broken, while the other two were badly shaken up, cut and bruised. They were brought in from the mine and placed in the hospital at Port Arthur. Potreau and Duchon recovered in a few days, and on 13th April Mr. Hammond wrote that the others had also been discharged from the hospital cured.

At the Craig Gold Mine.

At the Craig gold mine, south halves of lots 4 and 5 in the third concession of Tudor, a miner named Hugh McLeod was struck on the head by a windlass crank and received a nasty scalp wound. McLeod and another workman were hoisting ore out of a shaft with a hand windlass, and on the bucket reaching the top they were in the habit of emptying it and pushing it back into the pit while the rope was slack. On one such occasion the weight of the bucket jerked the crank out of McLeod's hand, he being at the windlass, and coming round struck him on the head with considerable force. The superintendent of the mine had within a few minutes of the occurrence cautioned the men against the practice of throwing the bucket back into the shaft in this way, but they did not pay attention to his warning. McLeod was taken to his home at Bannockburn, and recovered in a short time. The accident occurred on January 18.

On January 28, on the same property, a man named Joseph Jackson had his finger broken by being struck with a hammer in the hands of another workman while drilling.

At the Canadian Copper Company's Nickel and Copper Mines.

James McGregor had one of his legs broken on February 22 whilst prying out ore from roast bed No. 329 in the roast yard of the Copper Cliff mine, by having his leg jammed between two large blocks of ore. The man received every care, and on March 20 was reported as being well on the way to recovery.

On April 12, in a stope of the Copper Cliff mine, a Finlander named August Hille had both his legs broken above the knee. He was at the bottom of the stope shovelling ore into a tram car when a piece of rock or ore rolled down the side of the pile from which he was loading, and struck him. The pile was of ore accumulated and broken down during the preceding winter. Hille at once received surgical treatment and was transferred to Sudbury hospital next morning, where he made satisfactory progress. He was discharged about August 10, walking with crutches, but in the expectation of being able to resume work in a few days. While off duty he received from the co-operative fund of the mine benefits at the rate of one dollar per day. This is a fund maintained by a contribution of 50 cents per month from each of the Canadian Copper Company's employes, officials and workmen being both included. The company contributes to this accident fund, and allied objects for the welfare of their men, over $400 a year. It is under the sole management of the employes, and, it is stated, is highly appreciated by them especially by the married men.

Alfred Dean, one of the Company's miners was engaged on the eighth level of the Copper Cliff mine on October 28 shovelling ore into a mine car when he was struck by a piece of rock falling from, or supposed to have fallen from, a point overhead, where a winze was being put through from the seventh to the eighth level. The piece of rock struck Dean in the small of the back and inflicted injuries which, though apparently slight at first, proved to be severe. However he made good progress towards recovery, though on December 17 he was reported as still unable to work

Victor Maaki, a miner employed by the Canadian Copper Company, while at work in the ninth level of the Copper Cliff mine on August 9 was struck by a piece of rock which broke his left leg. Inspector Slaght was at the mine when the accident occurred, and as a result of his examination and inquiry was satisfied that every precaution in scaling and testing the walls and roofs of workings had been taken by the management of the mine. The foreman had finished scaling in the neighborhood of the place where the accident happened only at seven a.m. of the same day, and regarded the spot as safe. Maaki was removed to Sudbury hospital, where he made a good recovery.

At the Deloro mine, owned by the Canadian Goldfields, Limited, Timothy Dady, a miner, while descending to his work on the morning of April 5, slipped on the ladders in the Gatling shaft, and fell a short distance on to a landing, without receiving any serious injury. The accident was due to his own carelessness. On April 10 he was expected to be at work in a day or two.

At the Deloro Gold Mine.

At the same mine on April 22 an assistant drill runner named Charles Wellman, while at work in one of the stopes in the Tuttle shaft, was slightly scalded by a hose coupling becoming disconnected and the escaping steam striking him in the face. He was off work about a week.

A driller named William Davidson, while at work in the Deloro mine on May 19, carelessly laid his thumb over the end of a drill he was holding, and received a full blow from a hammer wielded by his partner John Craig. His thumb was badly damaged, but no more serious results followed.

At the same mine two minor mishaps were reported on June 8, whereby John McCullagh received a cut across the back of his hand through a piece of rock falling upon it from the wall of the lode after blasting, and Charles Froath was scalded in the face by a steam hose attached to a rock drill breaking.

On October 5 an employe of the Company named Thomas Christy was struck across the back at the hip by a two-inch plank falling a short distance in the first north winze. The accident was not a serious one.

At the Foley gold mine, owned and worked by the Foley Mines Company of Ontario, Limited, a Swedish miner named August Johnson, on May 1 fell from the ladder in the North shaft, a distance of about seventy-five feet, receiving very severe injuries. His skull was fractured, his head otherwise badly cut, and his left leg broken just below the hip joint. The ladders were said to be in perfect order and the air in the shaft exceptionally good. As the Mines Act requires that every footway or ladder shall have substantial platforms at intervals of not more than forty feet, inquiry was made as to the distances from each other of the several landings or platforms in the manways of this shaft. The superintendent of the company stated in reply that between the first and second levels —a distance of fifty feet—the ladder platforms were sixteen and eighteen feet apart. At the time of the occurrence Johnson had just left the second sollar or platform and had climbed, as nearly as could be ascertained, about fifteen feet when he lost his hold on the ladder. His fall would have been stopped on the sollar he had left but for the fact that in his descent he struck a man who was just leaving the second level, which threw him into the skip-road. After this his fall was broken by striking the bearing pieces under the skip stringers, which are about eight feet apart. When he reached the bottom of the shaft, Johnson's fall was broken by about five feet of water in the sump. The man was subject to epileptic fits, and it is believed that he lost his hold of the ladder while in one of these. He was placed under the care of Dr. McKenzie, who on May 21 reported his complete recovery as almost certain.

At the Foley Gold Mine.

In the same mine and in the same shaft on May 25 one of the company's miners named William Robinson, while clearing away a platform preparatory to blasting, broke a plank on which he was standing and fell a distance of thirty feet. Two other men named Anderson and Mattson were also injured, but all three recovered, Robinson in about three weeks and the other two a week or two later.

The only fatality of the year took place at the Olive gold mine, the property of the

Preston Gold Mining Company, on August 20, when a Swedish miner named Gustavus Dahlgrin lost his life under some-

At the Olive Gold Mine.

what unusual circumstances. The facts seemed to warrant investigation, and Mr. J. A. Bow, Inspector of Mines for Western Ontario, was instructed to make due inquiry and report. Mr. Bow's report is as follows :

"I have the honor to report herewith the result of my investigation into the accident which occurred at the Olive mine on August 20, wherein one Gustavus Dalghrin lost his life.

"I made the investigation on December 22, and examined under oath Eric Gustavson, Hans Lennor, Ole Slett, Charles Honeychurch and W. A. Preston, manager of the mine. The circumstances of the case were as follows :

"The accident took place on August 20 last, in No. 1 shaft on the main vein. The shaft was 68 or 69 ft. deep. At a depth of 63 ft. from the surface drifting had been commenced east and west on the vein. The east drift was about 5 ft. in, and the west drift a little more. A ladder way extended from the surface to the 63 ft. level. The ladders were substantial and the rungs all good. I think the top ladder was suspended by a rope and the succeeding ones securely fastened to it so that they were safe for travelling up and down. (I say "I think" because the evidence was not very definite on this point.) The lowest ladder was suspended from the others by a rope, so that it could be hauled up when blasting.

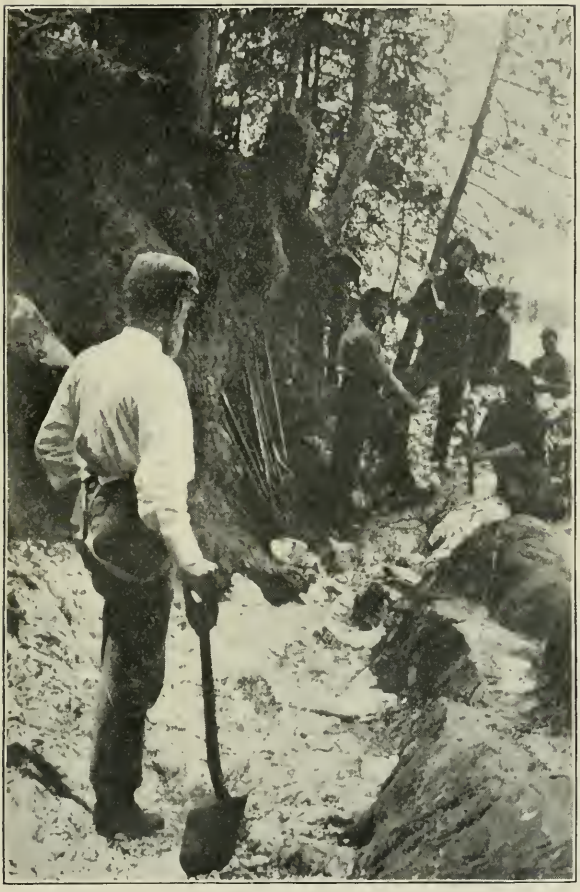
"The mine was being worked by day shifts only and blasting done at six o'clock in the evening. Thus the air in the mine was clear for the commencement of work on the following morning. All work was being done by contract.

"The said Gus Dalghrin and Eric Gustavson were partners working under contract to drift in the east drift at the 63 ft. level. They had been drilling all day and had drilled three holes for blasting, two of which were charged fully and the third with only a small amount of powder for "squibbing," *i. e.*, blasting out a small chamber at the bottom of the hole so that a larger quantity of powder could be put in and a more effective blast obtained. At 5.30 p.m. everybody had come out of the shaft and the blasting was done.

"Now Mr. Preston, the manager, had informed the miners that it was dangerous to go down the shaft in the evening after a blast, and that on no account were they to do so until the following morning. But notwithstanding, Eric Gustavson, who in his evidence stated that he did not think it was dangerous and did not remember having been told by Mr. Preston not to go down, and his partner, Gus Dalghrin, went down about 7 p.m. (after eating hearty meals) to charge the third hole for blasting that same evening in order to save time. Dalghrin went down ahead. They charged the hole and were down but a few minutes when Dalghrin took sick—the air being very bad. Gustavson told him to go up while he finished. Dalghrin went up the ladder and Gustavson having prepared the hole for firing started up also shortly after. The latter had got about 15 or 20 ft. up when he felt a heavy body falling past him, which touched or grazed his shoulder. (Dalghrin was about 40 feet from the bottom when he fell.) Knowing that it was Dalghrin, but feeling sick himself, Gustavson continued to the surface. Dalghrin was not killed instantly as Gustavson could hear him breathing heavily at the bottom.

"When Gustavson got to the surface he sent Charles Jackson down. Jackson went down immediately, and was heard calling for help at the bottom. Meanwhile the alarm had spread and all the miners and others on the premises had assembled.

"Hans Lennor, who was employed as lander, went to Jackson's assistance. He found Jackson trying to get Dalghrin into a sitting posture. Lennor did not go right to the bottom at first, but only to the drift. Jackson was nearly unconscious. Lennor called to him to give him his hand, which he did after some difficulty, and Lennor pulled him up into the drift, leaving Jackson lying there in an unconscious state. Meanwhile Gustavson had come down again, but as he could be of no assistance he returned to the top and fainted when he reached the surface. Fortunately Dr. R. M. Simpson of Winnipeg was at the mine at the time of the accident, and knowing that the men would faint on



Yum-Yum Mine. Out-cropping of quartz on G vein, p. 50.

Sawbill Mine. Gold Reef on 314 X, p. 63

Crosscut on the Hammond Dike, p. 65.

reaching the surface he had made preparations to catch them at the top, thus saving the lives of all who could walk up the ladders unaided.

"Lennor next went down to help Dalghrin. He could hear the latter breathing heavily at the bottom. Lennor's light had gone out long before this, leaving the place in total darkness. Dalghrin was sitting against the foot wall of the shaft with his head resting sideways on his shoulder and "snoring" heavily. Lennor raised Dalghrin up into the drift by means of a plank. The body of the latter was quite limp. Unfortunately he slid back into the shaft, feet first, when Lennor was preparing to ascend the ladders. The floor of the drift, it appears, sloped gently toward the shaft, which was about 6 ft. below the drift. Lennor put out his hand to prevent Jackson sliding back also. The latter caught Lennor around the waist. Lennor tried to climb the ladder with his burden, but went six steps only, took sick and had to return. He left Jackson in the drift and went to the surface.

"Ole Slett, a miner, went down when Lennor came up, and found Jackson in the drift. He took a rope down with him which he tied around Jackson, and, the other end of the rope being held at the surface, Jackson was pulled up, Slett walking up the ladder and holding Jackson. Dalghrin was evidently dead by this time, as Slett did not hear any noise from him.

"Charles Honeychurch, who had just arrived that day and had taken a contract to sink in the shaft, next went down to get Dalghrin. He took a light down but it went out as soon as the bottom was reached. Dalghrin was lying just where he had fallen from the drift. He was apparently dead. A rope, one end of which was at the surface, was tied by a slip-knot around his body. The body was hauled up, Honeychurch walking slightly in advance up the ladder and holding the rope. About thirty-five feet from the bottom the body slipped through the loop of the rope and fell to the bottom. The rope was tied around the waist or chest and slipped over the arms and head. Honeychurch came to the surface for fresh air, and went down again in a few minutes. This time he tied the rope more securely and the body of Dalghrin reached the surface without any more trouble.

"Mr. W. A. Preston, the manager, was at supper when the accident occurred. Hearing some shouting he ran out and found the men all running towards the shaft. He went up and saw Lennor, Gustavson and Jackson lying unconscious. Dr. Simpson was attending them. Honeychurch was down in the shaft. Mr. Preston had the bucket sent down with a fire in it to clear away the smoke and gases. The body of Dalghrin was brought up and life was found to be extinct. Dr. Simpson examined it carefully. There was a bruise on the back of the head which was much swollen and other bruises on the face not swollen at all, showing that some of the bruises which must have resulted from the second fall were post mortem.

"Dr D. C. McKenzie of Mine Centre saw the body and told me that he believed death to have been caused by the first fall, as some of the bruises were post mortem.

"I called upon Dr. Simpson at Winnipeg, and his account of the affair was practically the same as I got at the mine. He stated that Dalghrin was not down in the shaft more than fifteen minutes altogether before he was brought up, and Jackson not more than about five minutes. He also stated positively that he distinctly remembers Preston telling the men not to go down in the evening after a blast, and that Eric Gustavson admitted so on being questioned by Mr. Preston on the day of the accident."

At the Stella Gold Mine.

At the Stella mine, mining locations S86 and S87, the property of the Ontario Prospectors' Mining and Development Company, Limited, on December 13 a miner named Uriah Blight fell a distance of 60 feet down the shaft. No bones were broken, but the man sustained a severe shock to his nervous system. It appears that he was down in the shaft some five feet from the surface and standing in a corner with his feet braced on two logs, cutting away some ice which interfered with the hoisting of the ore bucket. From this precarious position he slipped and fell. On December 28 he was reported as being all right save for the violence done to his nervous system, and as expecting to return to work after the New Year.

Mining Roads

There was expended by the Government last year in the construction of mining roads the sum of $32,956, their aggregate length being about 52 miles. The longest of these is the Bonheur and Sawbill Lake road, extending from Bonheur station on the C. P. R. to the gold mines on Sawbill lake. Its general direction is southwesterly, crossing in its way Gull river and passing by Gull, Surprise and Red Paint lakes. The total length is 30½ miles, which has been chopped out 30 feet wide, grubbed 20 feet wide, and graded the whole distance except the crossways on an aggregate of five miles. Three bridges were built over streams, each with a span of 40 feet. To improve the channels of transportation between points on Wabigoon lake and the Manitou lakes, as well as to make easier the means of communication between the C. P. R. and points on Rainy lake, a road of 7½ miles was built from the head of Minnehaha lake, which is connected with lake Wabigoon, to Trafalgar bay on the Upper Manitou. As parts of the same improvement a dam was built across Wabigoon river at Dryden, just above the falls, and another on Manitou river. By the latter work the waters of Wabigoon lake and river are made navigable throughout the summer for a distance of 30 miles, and by the former the waters of the Manitou lakes and river for a distance of 50 miles. The road is the connecting link between the lakes. In the Shoal Lake region on the Seine river about three miles of road was constructed and improved from Mine centre towards Bad Vermillion lake, while northward from this lake a road 40 feet wide was cut out and graded to Turtle lake, where some promising properties are worked. What is known as the Rat Portage and Rainy Lake road was continued last year from Hilly lake to the Pine Portage mine. A good deal of traffic passes over it to the mines, and it will probably be extended at an early day to Long Lake Narrows. About five miles of road was also constructed leading out from Rat Portage to mines and mining lands in the direction of Rossland, known as the Rossland road. On the north shore of lake Superior the Jackfish Bay and Long Lake road was extended a little over three miles, while near the village of Schreiber a bridge was built over a deep ravine to afford easy means of reaching mining and other lands in that vicinity. The cost of these several improvements is given in the following table :

Bonheur and Sawbill Road.

Communication from C. P. R. to Rainy lake.

Mine Centre to Turtle Lake.

Roads out of Rat Portage.

North of Lake Superior.

Bonheur and Sawbill road	$19,443
Wabigoon and Manitou works	8,430
Shoal Lake road	500
Turtle Lake road	1,983
Road to Pine Portage mine	600
Rossland road	800
Jackfish Bay road	900
Schreiber bridge	300
Total	32,956

Appropriations of $15,000 have been made for the construction of mining roads this year.

Mines of Northwestern Ontario

By James A. Bow, Inspector

Introduction

I HAVE the honor to present hereby my first annual report on the Mines of Northwestern Ontario. The report embraces all working mines and nearly all locations where more or less prospecting or developement work is going on or has been done. As I travelled the first part of the summer in company with Dr. Coleman and Prof. Willmott, who were out on geological work for the Bureau, a number of places will be included in their reports which will be only lightly or not at all mentioned here. It would be impossible to include in this report all locations where operations are going on, as we are continually hearing of the commencement of testing or developing in some new place, and within the past two or three months there have been a number of such that have not been visited by me.

So far the prospects of the country have been improving. New sections are being opened up and developed, and the older sections in most cases give no reasons for discouragement. The Lake of the Woods country still stands in the front with the largest mines and mills. Gold is being found in a number of new places there, such as on Camp bay, Shoal lake, etc. And although a few of the mines give discouraging results, the larger ones such as the Sultana, Regina and Mikado, which have the most extensive developing, appear to be improving. The Lower Seine river country received a little set back when some of the mines there closed down, but now things are looking more encouraging than ever. The Foley mine is looking best between the 200 and 300 foot levels. Several new mines have opened up, such as the Olive, Golden Star or Randolph and AD2, and there is no doubt that the Lucky Coon and Ferguson will soon commence operations again also. I am told that work is going on in a number of places on the Seine between Shoal and Sawbill lakes, and also east of the Sawbill. The Sawbill country holds its own. This, like all other parts, will require time to prove its value; but it looks as if, with the big Hammond Reef, it would have a very bright future before it. Prospecting has been going on in the Shebandowan section, but not much can be said about this place yet. All of these regions have some, if only one or two properties that will pay well; but when it is considered how little is really known of what is under the ground, and in fact on the surface too in most cases, it seems foolish to jump at any conclusions. The Manitou country received a "black-eye" when the mines there closed down, but the people in that section are not discouraged. There are some good veins there, and there is no reason why it should not be quite equal to the other sections of the country. There is work going on in several places, and the Neepawa mine will be opened again right away. The fact of a mine or a number of mines closing down at any place is not necessarily a reason for discouragement, as there are so many reasons for their so doing, and it has seldom been the case that it has been done from the fact of the vein playing out. A new section south of the railway track, between Tache and Brulé, of a few square miles in extent is being prospected and developed, and gives very good promise. North of the track in the Lac Seul and Minnietakie regions a number of locations are being taken up, and according to reports that will prove to be a very good country. The Jackfish country north of Lake Superior received a set back also on account of the Empress mine closing down, but it was certainly not from want of ore that it did so, and according to reports it

will start up again in the near future. The old Silver mining region at Port Arthur is beginning to show signs of life again. Some work is being done at a couple of the mines.

As I stated before, I made my first trip over the country with Dr. Coleman and Prof. Willmott. We left Rat Portage on June 10 by canoe and visited all the mines on the Lake of the Woods that were then in operation, finishing up and returning to Rat Portage on June 30. We next took the train to Wabigoon, and after Dr. Coleman and I visited Dryden to look at some properties we left Wabigoon by steamer on July 6 for the mouth of the Litt'e Wabigoon river, which flows into Little Wabigoon lake. From this point we took to our canoes again and voyaged up the river to Long lake, across several portages to Big Turtle river, and down the latter to the Seine. We visited the working mines in that section and then continued up the Seine to the Sawbill country and from there to Savanne, arriving at the latter place on July 22. We took the train to Fort William that night, stayed there for a day or two, and continued east. Dr. Coleman went through to Sudbury, while Prof. Willmott and I stopped off at Schreiber and Jackfish to visit the mines at these points. Prof. Willmott left me at Jackfish, where I stayed for several weeks, in the meantime visiting some locations in the neighborhood. Receiving instructions to make another tour of inspection, I went to Rat Portage again, and on September 7 left by canoe, making another trip over the Lake of the Woods, and returning on September 22. I then went to Savanne and with two canoemen made the trip down the Seine river to Shoal lake, leaving Savanne on October 9, and visiting the Sawbill and other places on the way. Having finished at the Seine river country, I started for Wabigoon by way of Rainy and Manitou lakes, with only one canoeman, arriving there on November 2. I stayed there for several weeks, visiting some places in the neighborhood during this time, and then took the train to Fort William, where a couple of the old silver mines had commenced operations. Returning to Bonheur, I made the trip to Sawbill and return by stage, and continued west to Rat Portage, stopping for two days at Wabigoon on the way. On December 16, desirous of going to Mine Centre again, I took the train via Winnipeg and Tower, and the stage from the latter point, which is two days journey from Mine Centre. Returning the same way I arrived in Rat Portage on December 31. On January 19 of this year I went out to the Regina mine by stage and returned on the 21st.

The larger mines, as a general rule, I find are in a pretty safe condition, the managers comply ng satisfactorily with the Mines Act. Copies of the latter were left at all the places I visited, and the Inspector's Books at the principal mines.

Lake of the Woods Mines

My first object of visit was the Hay Island mine, situated on the eastern side of the long arm which stretches north from Hay island, in the Lake of the Woods. This is an old mine, originally known as the Keewatin. Two shafts had been sunk; one near the shore, now completely submerged during high water, and another a few hundred feet back on high ground. These shafts are said to be on the main vein. The former exposed at the bottom a 4-foot quartz vein, but in the latter the vein averages less than a foot in width. The mine is now owned and worked by the Hay Island Gold Mining Company. Mr. John Kenty is manager. I visited the place on June 10 and on September 7, and found work progressing favorably.

Hay Island Mine.

There are two veins on the property, one called the main vein, and about 200 feet west of it a parallel vein running N. 20° E., which the manager believes joins the former at some point to the northeast. The main vein has been traced for about 50 yards near the shore, and what is believed to be the same has been stripped and traced for 100 feet, about 300 yards farther in. It ranges from six to 12 inches in width. The manager is not sure that this is the same as the 4-foot vein exposed at the bottom of the old submerged shaft, but is working with the expectation that it will prove to be. A vertical shaft is being sunk on a line between the two

old shafts for the purpose of proving the continuation. It will be sunk 100 feet, and cross-cutting will be carried on east and west. On September 7 the shaft was down 64 feet.

The branch vein has been traced about 50 feet. Two test pits several feet in depth have been sunk upon it, and a little stripping done. The vein is rather irregular, but shows about 18 inches of quartz.

Hoisting is done by horse and whim. There are 10 miners employed, and work is carried on by day and night shifts. The shaft is timbered at the surface and properly fenced.

Dominion Gold Mining Co.

Gold Hill Mine.

The Gold Hill property lies east of Big Stone bay. This mine has been mentioned in previous reports and will not be dwelt upon at length here. It is owned by the Dominion Gold Mining and Reduction Company.

On June 11, at the time of my first visit, four miners were employed in opening up the Combination vein, which had been recently discovered It is situated about a mile south of the former workings. This was the only place where work was going on at the time. Two test pits were being sunk about 50 feet apart; one was 15 feet deep and the other nine feet. The vein was four feet wide on the surface and consisted of green schist and quartz mixed. It was very rich in free gold.

Operations were discontinued on this vein a few weeks after, and work on the Pebble vein commenced.

On my visit of September 8 all work was concentrated in sinking a shaft on the latter vein. It is six by eight feet in size and has reached a depth of 115 feet. The first level is 60 feet from the surface. A drift has been run west 23 feet along the vein, and another east 11 feet. The second level is 115 feet down, and at this point a fork is being driven which was 11 feet in at the time of my visit.

The vein in the shaft varied in width from 12 to 18 inches, and consisted of quartz mixed with a considerable amount of country rock. The dip of the vein is nearly vertical at the surface, but gets flatter with depth.

The shaft is timbered to a depth of 12 feet, and substantial ladders with iron rungs are provided.

The smoke and gases after a blast are cleared out by air which is forced down through a canvas tube by means of an air blast.

A Hughes pump with a 3-inch intake was ready to be taken down the shaft as soon as the sump was sunk. A small steam hoist and a boiler of 15 or 20 horse power, which furnishes power for the hoist and air blast, completes the machinery list. The old mill with all its machinery is still on the property, but has not been running for some time.

Four miners were employed in September under manager Charles Smith.

Black Jack Mine.

Work has been discontinued at the Black Jack mine, which adjoins the Gold Hill property and belongs to the same company, viz., The Dominion Gold Mining and Reduction Company of London.

Later notes on the Dominion Company's properties.

I had an interview with Mr. Alexander M. Hay, president of the Dominion Gold Mining and Reduction Company, on January 24, and got the following notes from him: All work on the Black Jack and Gold Hill properties has ceased. In the fall of 1897 diamond drilling was done at both places, but without any satisfactory results. A bore crossed the Black Jack vein at a vertical depth of about 300 feet, and one crossed the Pebble vein at a depth of about 350 feet, but the veins at these depths were small, as at the surface. Diamond drill testing has also been carried on lately at the Sultana Junior property, which belongs to the some company. The vein was crossed at a depth of 280 feet, but results were not satisfactory. Some more boring may be done here in the future, but the Black Jack and Gold Hill properties will probably be given up.

Rat Portage Reduction Works.

The Rat Portage Reduction Works are now managed by Mr. Hay and are open for business as usual. No alterations have been made in the machinery.

Golden Gate Mine.

About three-quarters of a mile from the Gold Hill camp, and connected with the latter by a good waggon road, is the Golden

Gate mine. This property originally belonged to the Dominion Gold Mining and Reduction Company, but has been bought and is now worked by Mr. W. A. Laycock. There are a number of veins on the property which have been tested more or less.

Golden Gate Mine.

On June 11 operations were going on in one shaft only. It had then reached a depth of 60 feet. Thirty feet from the surface a level was driven along the vein 20 feet west

On my visit of September 8 I found that work had been discontinued in this shaft. It was then 63 feet deep, and the drift had been driven 69 feet altogether. There is four or five feet of vein matter shown in the shaft, consisting of quartz and green schist, and an 18-inch pay streak. The water is kept pumped out to the bottom of the drift with the expectation of commencing work again soon. Meanwhile two other veins on the property are being tested.

About a hundred yards north of the main shaft is a vein on the contact. It is from 10 to 20 feet wide and consists of large parallel quartz stringers alternating with bands of green schist. It has been traced about three-quarters of a mile. Test pits have been sunk in three places, and one of these is being continued.

The other ore deposit is a felsite dike five or six feet wide, which has been traced about half a mile. It is in the schist and runs with the formation, which has a strike of northeast and southwest. A test pit is being sunk upon the dike.

The force consisted of four miners and two surface men.

There is a comfortable boarding camp on the property, besides two or three other buildings.

Mines near Andrew Bay.

The Stella mine, owned by the Ontario Prospectors' Mining and Development Company of Rat Portage, consists of locations S86 and 87 east of Andrew bay, on the eastern side of the Lake of the Woods. Mr. Neil Campbell, manager of the mine, has been employed with a force of men all summer developing the property. I visited the place on June 11, and again on September 9.

Stella Mine.

There are several veins so far known, two of which are being developed. The main or Stella vein is a pyritiferous vein of quartz containing a little green schist. It ranges from two to four feet in width, and has been traced about a mile and a half. The strike is nearly east and west and the dip 60° south. It crosses both locations.

There are one or two smaller parallel veins north of this vein, one of them about 20 feet distant.

The country rock at these veins is trap, but the contact with the granite occurs a short distance to the north.

A few hundred feet north of the Stella vein is what is called the Contact vein, as it is believed to be on the contact of the formations. It is from 16 to 20 feet in width and has been traced about a mile and a quarter. The strike of the vein is a few degrees south of east, and the dip nearly vertical The vein matter is green schist and quartz, pretty well mixed and charged with pyrites.

On the Stella vein a shaft is being sunk which has reached a depth of 38 feet. The vein is nearly vertical at the surface, but at a depth of 20 feet dips suddenly to the south, and five feet farther down leaves the shaft altogether. It does not pinch however. The shaft will be continued straight for a depth of 50 feet, and crosscuts will then be driven to the south and north in order to cut respectively the main vein and the smaller one upon the north side which dips toward the shaft.

The shaft is on S87. On S86, about a quarter of a mile west of the shaft, where the ground rises into a steep hill, an adit has been driven 35 feet west into the same vein. The vein varies from a width of two feet at the entrance to three or four feet at the end. This adit has been discontinued.

About 50 feet of stripping has been done on the vein between the shaft and the adit. The covering material is principally loose rock and earth, with a thick growth of small trees.

On the Contact vein a shaft eight by 14 feet in size has been sunk to a depth of 28 feet.

About a quarter of a mile west of this shaft a pit has been sunk to a depth of seven feet. This was done last March, but work was abandoned on account of water a vugh having been tapped which filled the pit. It is expected that operations will be resumed at the latter opening, as a large amount of quartz is shown at this point on the vein.

The large shaft on the Contact vein is not in a safe condition, and the necessity was pointed out of having it securely timbered at the surface before sinking is commenced again. Instructions were also given to have a fence built around the shaft on the Stella vein. Copies of the Mines Act were left with the manager. There are nine miners employed, working day and night shifts. Sinking is done by contract at $20 per foot for the first 50 feet. The shaft is eight by 12 feet outside the timber.

The old Jenny Lea camp, which is on an adjoining location, has been used by the present company so far, but it was their intention to erect camps of their own very shortly.

A good wagon road three and a quarter miles long runs from the mine to the landing on Andrew bay, from which point steamers can run to Rat Portage, 18 miles distant.

In an interview with Mr. Campbell, the manager, early in January of the present year, I learned that the main shaft has been sunk 65 feet, and 30 feet of cross-cutting done to the south.

Another property near Andrew bay is known as the Triggs mine, which was acquired by the Triggs Gold Mining Company of Ontario in the month of October. I learn that development work is being actively carried on there with a force of eight miners, but I have not had an opportunity to visit it yet. The property consists of three locations aggregating 113 acres.

The Triggs Mine.

Gull Island.

After leaving the Stella mine I started for Gull island, where I was told some work was going on, arriving there September 10. Five miners were at work sinking a shaft by contract. I was not able to obtain any definite information there about the company or their intentions, but made the following notes :

Ambrose Mine.

This mine is situated on the southern extremity of Gull island, north of the Grande Presquile, and consists of location K65. It is an old property, having been discovered a number of years ago, and a little work had been done before the present company commenced operations last summer. The country rock is a soft, clay slate. There are four or five veins known so far, which are all parallel and run with the strike of the slate, which is a few degrees north of east. They are close together and cut across the point of the island. The dip is nearly vertical in each case and good clear walls are shown as far as they have been exposed. The vein matter is a quartz porphyry principally, but more or less quartz is contained, occurring as stringers of various sizes, and sometimes taking up the whole width of the vein. The ore bodies are no doubt eruptive dikes, and the quartz a subsequent deposit.

The two most northerly veins are about 15 feet apart. The more northerly only outcrops in one place, but shows a width of 10 or 12 feet. The covering material is moss and trees, which give considerable trouble in stripping. The other is the main vein It is traceable for a distance of about 450 feet, outcropping in two places only. The third vein to the south can be traced about 400 yards. It has been uncovered in several places, and shows a width of from four to six feet, with good walls. The fourth vein, 20 or 30 feet farther south, outcrops in two or three places and doubtless cuts across the island also. It is from seven to eight feet in width. This is a new vein, having been discovered last August.

About 125 feet above the lake, and 150 feet inland, a shaft is being sunk on the main vein. It is $6\frac{1}{2}$ by $10\frac{1}{2}$ feet outside the timber, and was forty feet deep on September 10. The work is being done by contract, the first 50 feet to be sunk at $25 a foot. The width of the vein varies from six feet at the top to eight feet at the bottom. There is a two-foot pay streak of quartz at the bottom, rich in galena and zinc-blende. Timbering has been carried to a depth of 10 feet. A horse and whim are used for hoisting.

There is some old work on the property which was done last winter by the former

owners. At the east end of the veins the rock rises in a steep bluff from the water. Near the level of the water a tunnel has been driven west along the first vein for a distance of 60 feet. There are a log boarding camp and a couple of tents on the property for the accommodation of the men.

Bath Island Mine.

The Bath Island mine, owned by the Bath Island Mining Company, Limited, of Toronto, consists of locations 504 and 589P. This island is north of Cliff island, which is north of the Grande Presquile. Like Gull island, this property was discovered a number of years ago, and is similar in nature to it. The formation is a clay slate, and the ore bodies consist of a series of parallel dikes of porphyry, containing more or less quartz as stringers. They run nearly east and west with the strike of the schist.

Bath Island Mine.

I did not examine more than two or three of the veins; but got some general information from the foreman who was in charge at the time.

There are said to be 19 veins altogether, which average five or six feet in width and can be traced considerable distances. More or less test pitting and stripping work has been done on all of them.

The main vein is the second one from the south. It can be traced half a mile or more. A shaft $6\frac{1}{2}$ by $10\frac{1}{2}$ feet outside the timber is being sunk upon it. It was 84 feet deep on September 10. The shaft is sunk directly on the vein, which is practically vertical. The work is done by contract, the terms of which are to sink 100 feet and then crosscut 150 feet to the south and 100 feet to the north. There is a large vein called No. 2, which it is expected will be cut by the north crosscut. The vein varies in width from eight feet at the top to five feet at the bottom, and is three feet at the narrowest place in the shaft. The shaft is well timbered for a depth of 40 feet, and a manway cased off for the same distance. A hoister from Beatty & Sons, Welland, driven by a horse, is employed in raising the bucket.

About a quarter of a mile west of the main shaft on the same vein a shaft had been sunk about two years ago to the depth of 20 feet.

About 50 feet east of the main shaft there is an old test pit 20 feet deep on the main vein also.

There are nine miners employed in day and night shifts—four in the former and two in the latter.

The buildings consist of a cooking-camp, blacksmith shop, powder house and assay office. There is also a neat and roomy shaft house over the main shaft, and the bucket way is properly guarded at the surface.

The agreement in the contract is to sink the first 100 feet at $29.50 per foot, with the privilege of doing the next 50 feet at the same rate. This includes timbering, lagging and putting in ladder ways; the company furnishing the timber and lagging, and pumping and hoisting machinery.

Mr. Allan MacDonald of Rat Portage, who is the contractor, told me on January 3, that work was still going on. The shaft had been sunk 101 feet and discontinued. They were now working in the crosscut, which had been driven 43 feet north from the bottom of the shaft. They expect to cut No. 2 vein 48 feet from the shaft.

At the Passage.

Southwest of the Passage to Whitefish bay on the western shore is the property M. H190, a location of 57 acres owned by Messrs. Morris, Kennedy, Gaudaur and Bates of Rat Portage. I visited the place on August 28 and again on September 11.

Location MH 190.

The formation here is hornblende schist and trap, the contact with the granite being close by to the southwest. The ore deposits consist of fahlbands, or parallel bands of hornblende schist mixed with a dark quartz porphyry, and a proportion of quartz scattered all through it. More or less pyrites is contained, and the material is a little oxidized near the surface. There are several of these fahlbands close together, averaging in width from 12 to 20 feet apparently. But not much stripping has been done yet, and their extent has not been accurately determined. The main vein can be traced for a quarter of a mile. It outcrops at the shore and shows a width of 12 feet. There are several test pits along the vein, and a shaft of seven by 11 feet is being sunk about 250 feet from the

shore. It was 15 feet deep on September 11. A little test pitting has also been done on the vein to the south.

Work commenced here in the latter part of July. A force of six miners has been employed under Mr. George Bates as manager. It was at the shore where the main vein outcrops that the first signs of gold were found, and a little quarrying has been done here.

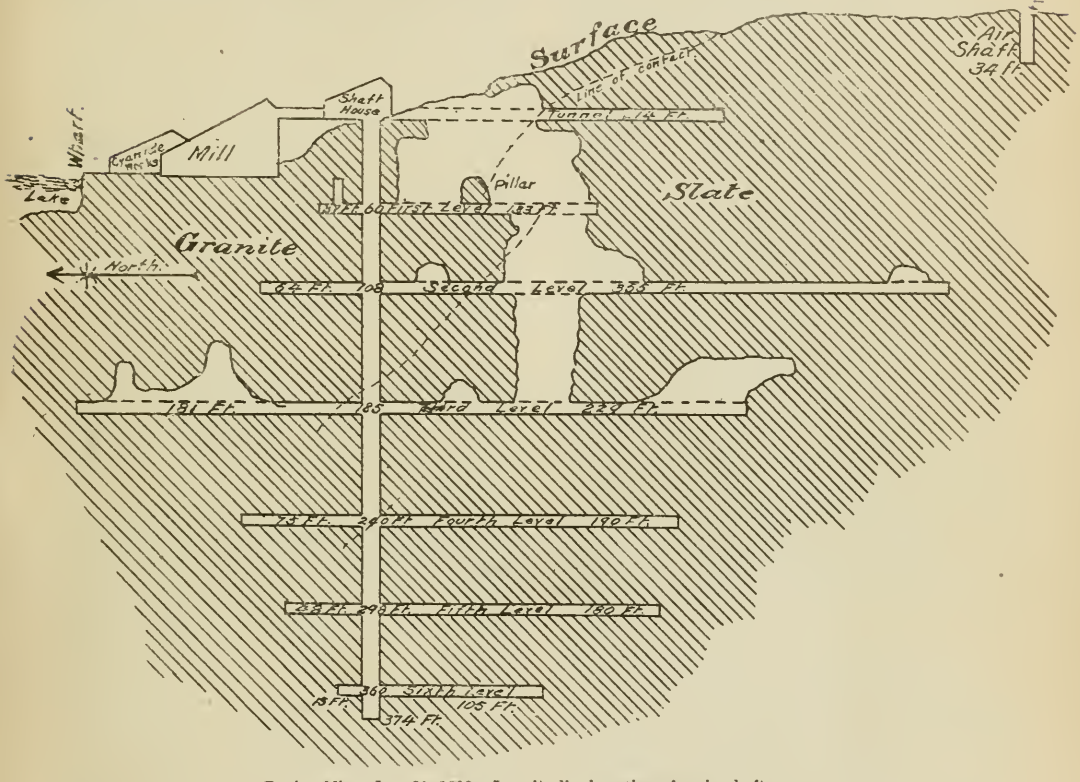
Mr. Morris told me recently that operations had ceased for the winter. The shaft had been sunk to a depth of 36 feet. The amount of quartz he said had increased towards the bottom, and the vein was richer.

The Regina Mine.

I visited the Regina mine on June 24 and on September 11. This mine is being rapidly developed and the vein seems to be improving with depth. The management has been transferred to Mr. Henry A. Pringle. Full accounts of the mine were given in previous reports of the Bureau. The following summary from the entries in the Inspector's Book gives the amount of work which had been done on the property up to September 11.

Details of the Workings.

There are four shafts altogether; the main shaft, six by 10 feet in size and 343 feet deep; the air shaft (400 feet south on the same vein) 34 feet deep; and the shaft on the west vein and Camp shaft, 72 feet and 18 feet deep respectively. The last three shafts are old work.



Regina Mine, Jan. 20, 1898. Longitudinal section of main shaft.

Three chains east of the main vein is a parallel vein called the Magazine vein. It has been stripped for a distance of about 50 yards up the face of the hill. It averages about nine inches in width. An open cut about 30 yards long and of an average depth of eight feet has been made on it.

The following is the extent of workings in the main shaft, including the tunnel. The latter, which is driven south on the vein from the mouth of the shaft, is 214 feet long, and has been discontinued. Sixty feet from

the surface a level has been driven south 133 feet and one north 27 feet. One hundred and eight feet from the surface a level has been driven south 355 feet and one north 64 feet. One hundred and eighty-five feet from the surface a level has been driven south 229 feet and one north 181 feet. Two hundred and forty-eight feet from the surface a level has been driven south 91 feet, and one north 75 feet. Two hundred and ninety-eight feet from the surface a level has been driven south 49 feet, and one north 31 feet.

Stoping has been done in the first, second and third levels and in the tunnel. In the latter nearly all the ore has been stoped out overhead for a distance of 80 feet south, leaving sufficient for the support of the surface. In the first level stoping has been carried up to the tunnel for a length of 120 feet. In the north drift a 25-foot raise has been made. In the second level south for a distance of 70 or 80 feet along the vein the ore has been stoped out overhead up to the first level. A little stoping has also been done near the shaft, and near the south end of the same drift. In the third level north the ore has been stoped out overhead for a distance of 110 feet and with an average raise of about 18 feet. In the south drift a little stoping has been done in two places near the centre; and at the south end the ore has been stoped out for a distance of 60 feet, with a raise of 27 feet.

With the exception of the cyanide works no change has so far been made in the machinery. For drilling there are two air compressors and three machine drills. For hoisting and tramming there are a hoisting engine, two buckets, three cars and four trucks. For milling there are a Blake crusher, two five-stamp batteries and two Colorado Perfection concentrators. Power is supplied by three boilers and a steam engine. A cyanide plant, according to the McArthur-Forrest patents, has been installed for the treatment of the concentrates and tailings. It was completed and put into operation about the first of January, 1897. The capacity is 600 tons of tailings per month and two 10-ton vats of concentrates.

Machinery and Cyanide Plant.

The main shaft, including the manway, is in a suitable condition as regards safety. Stopes are properly secured with timbering and fencing. Other shafts are covered and danger notices posted up. The machinery in the mill is all properly guarded. The total force of the mine consists of 40, including 12 miners.

Mr. Pringle intends building a new mill entirely in the spring. It will be a 40-stamp one, or its equivalent in Tremaine steam stamps. A Tremaine two-stamp mill is to be installed right away, and worked all winter for experiment. If satisfactory, gravity stamps will be dispensed with altogether. The foundation for the Tremaine stamp was being prepared during my last visit; it will be placed alongside the old battery. The new mill will have a different site; it is to be built on a granite spur which juts out into the lake, close to the old one.

The mill and outside works are lighted by electricity.

Since last year a new blacksmith shop and a reading room have been built.

A steamboat named the Squaw, owned by the company, runs between the mine and Rat Portage.

On January 20, 1898, I visited the mine again and made the following notes: The main shaft has been sunk to a total depth of 374 feet. No drifting has been done in the first, second or third levels since last inspection. The fourth level has been driven south 190 feet altogether. The south drift in the fifth level has been driven a length of 180 feet, and the north drift 48 feet. At a distance of 360 feet from the surface a sixth level has been established. The south drift is 105 feet, and the north drift is 15 feet. Eighty feet from the shaft in the third level south a stope 30 feet long has been carried up to the second level. A stope 100 feet long has been commenced in the fifth level south, and will be raised to the third level. After this only the fourth and sixth levels will be driven (both directions) and the second level south, so that the mine will be worked by practically 120-foot stopes. The second level will be driven south indefinitely and a cross-cut made from it east towards the air shaft,

Recent progress at the Mine.

which latter will be connected by a raise from the cross-cut. The air shaft will then be continued vertically, crosscutting to the fourth and sixth levels, and used as the main shaft. The stope in the second level is being timbered over for the laying of tracks to be ready for the above work.

The vein in the mine varies in width from about one to nine feet. It is much larger in the lower levels than in the upper, and richer also. In the stope known as the third south raise it averages five feet wide, and in the 100-foot stope commenced in the fifth level it averages six feet. It averages about seven feet from start to finish in this latter level, and is nine feet wide at one place. In the sixth level it runs from one to five or six feet in width, and only one wall reached at the widest place Very little visible gold is found in the vein, and the percentage of concentrates is low.

No change has been made in the hoisting or drilling machinery, but the concentrators in the mill have been done away with until the new mill is built, and the Tremaine steam stamp mill is in place and running. The cyanide works are the same and are in continuous operation. The condition of the mine is quite satisfactory. The force has been increased by four miners. A couple of prospectors have been working on the locations all summer. The main vein has been stripped a bit and some test pits sunk. It has also been traced a couple of hundred yards farther.

Sioux Narrows.

Sioux Narrows Mine.

I was told that at the Sioux Narrows, the entrance to Regina bay, some work had been done on a property owned by the Bertram Iron Works, of Toronto. I visited the place on September 13, on my way from the Regina mine, but found nobody there, and hence could get no information. I walked inland a bit, and following a well beaten trail came to a shaft about 150 yards from the water. It was about 40 feet deep, and sunk on the vein. The vein, which runs east and west, consists of quartz and felsite schist, very pyritiferous. The walls appeared to be indefinite

Trojan Mine.

Trojan Mine

The Trojan mine is situated east of Atinimikie bay (or Grassy bay, as it is locally called), which is a small bay on the southeastern side of Whitefish bay. The landing place is in the former bay, and a trail of about one mile leads to the mine. The property consists of locations 778 and 3 and 4 WA, aggregating 120 acres. It is owned by Messrs. C. Stirling, T. Walsh and M. P. Wright, of Rat Portage. I visited the place on June 23 and again on September 13.

The country rock is granite and trap. There are seven veins on the property. On locations WA3 and 4 there is a steep hill of trap which rises to a height of several hundred feet. On the top of this hill is No. 1 vein, which has been traced six chains. A shaft has been sunk 30 feet on it, but discontinued. Several test pits have been sunk on some of the other veins on the top of this hill.

About half way down the face of the hill is No. 2 vein, which has been traced five or six chains. A shaft was being sunk when I was there, and had reached a depth of 67 feet. Drifting has been commenced to the east, at the bottom. The vein showed splendidly at the top, being from 18 to 24 inches wide, and continued so for a distance of 25 or 30 feet, but began to pinch at that depth and at the bottom is only a few inches in width.

The force consisted of three miners, a cook and a blacksmith.

I met Mr. Wright in Rat Portage recently and he told me that at the bottom of the hill a new vein (No. 3) had been discovered, and that it was a contact between the granite and the trap. It had been traced 12 or 14 chains and was about six feet wide. Work has ceased at the mine, as it has just been sold.

Mascotte Mine.

La Mascotte Mine.

On June 23 and on September 13 I visited La Mascotte mine. It is close to the Trojan, being reached from the latter by crossing a small lake one-third of a mile wide. It is owned by the Colcleugh Gold Mining Company of Rat Portage. The property consists of location S79, which contains a little under 50 acres.

The location is bounded on the south by the lake mentioned above. A short distance from the lake the ground rises steeply to the north to the height of about 100 feet. The formation here is hornblende schist and granite, the contact with the granite coming in to the north about 100 feet back from the face of the hill. The strike of the contact is east and west. The schist is very irregular in general structure. This is manifested particularly in the appearance of the veins, which cannot be depended upon for continuity, especially near the surface. The strike is very irregular, and the thickness of the veins extremely variable. But it is expected that more regularity exists at a greater depth, and the richness of the veins is sufficient warrant for a thorough test.

There are four veins on the property, three of which are quartz veins, and the fourth a large dike containing felsite and quartz. The quartz veins all run roughly east and west and dip slightly to the north.

No. 1 vein is farthest north. It runs up over the top of the hill. In width it varies from three or four inches to five feet, and can be traced for 300 or 400 feet. The vein matter is a fine grained white quartz, with a little country rock mixed in, and slightly pyritiferous. No. 2 vein runs along the hillside south of No. 1. It is only a few inches wide, but can be traced for 200 feet. No. 3 vein, which is at the bottom of the hill, has been traced for 50 or 60 feet. No. 4 vein is on the west side of the property. As stated before, it consists of a large dike of felsite and quartz, running north and south. The walls were not uncovered, but it is over 20 feet wide. It runs through the granite.

Work on the Veins.

On the top of the hill a shaft has been sunk on No. 1 vein to the depth of 35 feet. The vein was five or six inches wide at the top, widened out to about five feet near the bottom, and then pinched out altogether within the next three or four feet. Work on this shaft has been discontinued. About 25 feet east of the shaft a test pit has been sunk four feet. Fifteen feet west of the shaft a test pit has been sunk six feet, and about 40 feet farther west a shaft has been sunk on the hillside on the same vein. Near the bottom of the hill a tunnel has been driven north 85 feet. This was intended to cut No. 1 vein, which it did at 60 feet from the entrance. Seventy-five feet from the entrance a crosscut has been driven east 31 feet, with the intention of again cutting No. 1 vein, but without success, and it is believed that the vein changes in direction after it crosses the tunnel and runs parallel with the crosscut, whereas it was running northeast in the tunnel. Sixty feet from the entrance of the tunnel a winze is being sunk, and was down 11½ feet on September 13. Mr. Kelpin, the manager, thinks the formation will be more regular at a greater depth, and intends to sink this winze until the vein improves considerably, and then drift along the vein towards the granite. The vein is only a few inches wide where it crosses the tunnel, but is two feet wide in the winze. No work has been done upon No. 2 vein, except a few feet of stripping. This vein runs more east and west than No. 1, and appears to join the latter where the tunnel is driven. A shaft has been sunk on No. 3 vein to the depth of 43 feet. The vein was four feet wide at the surface, and the dip to the north, but near the bottom the dip changed sharply to the south, and the vein pinched to two or three inches, hence work was discontinued. This vein, like the others, is very rich, showing considerable free gold. A few shots have been put in on No. 4 vein to get some samples, but practically no work has been done upon it. There is a force of six miners at work.

The buildings consist of a powder house, blacksmith shop, store house, cook camp, sleeping camp and manager's dwelling There is no wagon road leading to this or the Trojan mine. All supplies have to be packed in over a trail about a mile long from Atininikie bay.

Recent Work.

I met Mr. C. P. Kelpin, the manager of the mine, in Rat Portage on January 3, and he gave me the following notes on the work at the mine up to date: The winze in the tunnel was sunk 14 feet and discontinued. All work is now concentrated on No. 3 vein. The shaft was continued again, and sunk another seven feet, making it 50 feet altogether. Forty feet from the surface a drift has been driven on the vein 20

feet and is being continued. The vein runs from 10 inches at the entrance to two and a half feet at the end of the drift, and is very rich in free gold. But it disappeared altogether for the last eight or 10 feet in the shaft, which has been going through the granite for that distance.

Sixty feet west of the shaft a costean has been cut through six feet of gravel to bed rock for the purpose of finding the vein, which has been reached. The vein is all covered by this gravel west of the shaft, and requires considerable trouble to expose.

A contract has been made with J. Burley Smith for the testing of No. 3 vein with a diamond drill. The testing is expected to commence right away.

On Camp Bay.

Sullivan's Mine.

About half a mile north of Camp bay in Whitefish bay is a property which has been opened up within the past few months and has been creating considerable sensation. It is known as Sullivan's mine. I visited the place on September 14, and found work being pushed vigorously. The property consists of locations 56, 57 and 92S and 240D, aggregating 190 acres. It is owned by M. P. Wright, C. Stirling and T. Walsh of Rat Portage. It was discovered by M. P. Wright in August, 1896. A. B. Whitehead and Alan Sullivan of Rat Portage have secured a twelve months' option on it under an agreement to do a certain amount of development work. The country rock is green schist and trap, and the contact with the granite, the strike of which is north and south, occurs about 50 yards east of the ore body. The ore body, which for simplicity is called a vein, is in reality a large dike containing felsite and quartz, the latter occurring as a vein in the felsite. It ranges from four to ten feet in width and has been traced over a mile, some say over seven locations. The strike is north and south, which is the same as that of the schists.

Work done on the Property.

Operations commenced on July 3. A little stripping has been done here and there and several test pits sunk along the vein to discover the best place for a shaft. An eight by 10 foot shaft is being sunk about a half a mile north of Camp bay. It was 26 feet deep on September 14. The walls of the vein show very distinctly in the shaft, ranging from four to eight feet apart from the surface to the bottom. The quartz widens out from a few inches or a foot at the top to two feet at the bottom. In the shaft the vein matter consists of a hard schist on the foot wall, a soft schist on the hanging, and dark felsite and quartz between. The latter is heavily charged with pyrites. The quartz shows a large amount of free gold. Mr. A. B. Whitehead is general manager of the mine, and six miners are employed, all working in the shaft. The men were sleeping in tents at the time of my visit, but they intended to erect camps shortly.

A good wagon road leads from Camp bay to the mine. A dock has been built at the landing and steamers run from there to Rat Portage. Fifty tons of ore were to be taken to Rat Portage for a mill run, and there was already 20 tons at the landing.

On January 11 I got the following information from Mr. Wright, who is one of the owners of the mine and who had been out recently. The main shaft is 62 feet deep. At the bottom there is 15 feet of drifting along the vein in both directions. The vein is three and a half feet wide and contains plenty of visible gold. There have been built a sleeping camp, dining camp, powder house, stable and shaft house including blacksmith shop. A horse power hoist has just been sent out.

The Sultana Mine.

On June 30 I visited the Sultana mine, and also on September 23. During last summer very little work had been done below ground, as the entire milling and hoisting plant was being renewed. The old mill was kept running nevertheless, and sufficient work was going on in the mine, principally developing, to keep the mill supplied with ore. The following is the total extent of workings in the main shaft, to which all operations are now confined :

Main shaft of the Mine.

The shaft has been sunk to a total depth of 352 feet, and discontinued for the present as there is such a quantity of ore in sight that no more development work in a downward direction will be required

for some time. No. 1 level is 67 feet from the surface. No work has been done in it since last report. The north drift is 68 feet; the south 96 feet. In level No. 2, 127 feet down, the north drift has not been carried any farther; it is 67 feet. The south drift has been driven 160 feet. At a distance of 140 feet from the shaft a crosscut 12 feet wide has been driven west 30 feet. From the end of this crosscut the drift has been continued south 48 feet, making the total distance 200 feet from the shaft. In the third level, 187 feet from the surface, the north drift has not been carried any farther and is 13 feet. The south drift is 155 feet. At a height of 38 feet above the floor this drift has been continued south 34 feet, making it 189 feet altogether. In the fourth level, 262 feet down, the north drift is 52 feet and the south 94 feet. The fifth level is 337 feet from the surface. A drift has been run north 16 feet, and one south 40½ feet. A winze connects the first and second levels 35 feet north from the shaft, and another 80 feet south from the shaft. Between the second and third levels there are two winzes also, one 73 feet south from the shaft, and the other 142 feet south. Between the third and fourth levels there is a winze 102 feet south from the shaft. On the fourth level a winze has been commenced to connect with the fifth. It is 35 feet south from the shaft. On the third level, 35 feet south from the shaft, a winze has been sunk 26 feet. From the bottom of this winze a drift runs south to the winze connecting the third and fourth levels. Fifteen feet below the third level in this latter winze a drift runs south for a distance of 40 feet. A crosscut in this drift runs east 15 feet which is 165 from the shaft. The drifting between the levels has been done for the purpose of removing the ore body by underhand stoping. Fifteen feet of rock will be left for a roof in each case and the ore stoped out from this to the level below. The roof can thus be timbered and lagged at once, and there will be no further danger of falling pieces of rock. In the drift running north in the first level stoping has been carried 12 feet farther north than the end of the drift, with a raise of 40 feet all along. Fifteen feet of unworked ore is left at the shaft for security in all cases. In the south drift stoping has been carried to the end with a raise of 35 feet. In the second level in the north drift stoping has been carried 24 feet north of the end of the drift with an average raise of 45 feet. In the south drift there is 20 feet of stoping 73 feet from the shaft with a raise of 60 feet. In the continuation of the drift south of the crosscut the ore has been stoped out all along for a height of 30 feet. In the third level stoping in the south drift commences 73 feet from the shaft, and is carried to the end with a raise of 45 feet. No stoping has yet been done in the other levels.

Old stoping and new.

On the fourth level near the shaft is a sump 15 by 20 feet in size and 15 feet deep.

There is a lot of old work on other veins on the property, which has been mentioned in the fifth Report of the Bureau.

Old and new Workings.

An air shaft 32 feet east of the south drift in the first level is connected with the end of the latter by a crosscut. At a distance of 400 feet north of the main vain is the Pasha vein, running N. 20° E. It is three feet wide underneath the boarding house, where it has been uncovered but appears to be much wider at the north-east end. Some shots have been put in at this end for prospecting purposes. The vein dips toward the main shaft, and it is expected can be worked from the latter by crosscutting. This vein is a new discovery and Mr Caldwell thinks that it may prove a valuable one.

The Sultana has the largest body of quartz in sight of any of the mines in western Ontario.

Ore body of the Mine.

As is well known, it is described as a lens on account of its lenticular shape. The main body lies on the south side of the shaft; on the north side it is rather narrow. At the widest known place, which is at the end of the south drift in the third level, it is 66 feet; but a portion of this, about 20 feet near the west wall, is low grade and will probably not be treated. The vein is nearly solid quartz, only a little country rock showing in places. At the end of the south drift in the second level it measured 21 feet, and neither wall had been reached. At the end of the south drift in the fourth level it measured 32 feet, and only the hanging wall is exposed. The vein is nearly all

free milling, there being only about one per cent. of concentrates. Visible gold shows in some places, but it is not very common.

Machinery.

None of the new machinery was in operation at the time of my last visit, but it was expected to be placed in three or four weeks from that date. In present use there is for drilling an air compressor, a receiver and one machine drill. In the new mill a Rand duplex compressor, with condenser, having a capacity for twelve drills, is being set up. Another receiver will be added which will be kept in the mill, the present one being in the mine at the first level. Three more machine drills will be put into operation. Buckets are still being used for hoisting, but two 2-ton skips are on the premises, one of which will be used in the main shaft down to the fifth level, and the other kept in reserve. The skip-road and ladder-way are being entirely renewed. The old 16 horse power hoister now in use will be supplanted by a 75 horse power one made by Bacon of New York. The foundation is now being prepared. The old hoister will be retained for sinking below the fifth level The new hoister (which is not on the premises yet) is to have two drums five feet in diameter, one for raising the skip in the main shaft and the other for a new shaft in contemplation, which it is expected will be sunk vertically on the main vein about 500 feet south of the old one. A new rope one inch in diameter, made of crucible steel, will be used. There is a 45 horse power boiler for the hoister and compressor now in use in the old shaft house. Self dumping cars will be used in the mine and on the surface. Three or four will be used down below and two above, one to the mill and the other to the rock dump. A large new shaft house has been built of substantial timber work. Two tramways are being constructed, one to the mill which is over half completed, and one to the rock dump which is finished. The cars will be filled from a pocket into which the skip will dump automatically. The pocket is W-shaped, with two outlets at the bottom. A man will be stationed here continually to operate a gate which is pivoted on the central apex, and which when thrown one way or the other discharges the waste rock through one opening and the ore through the other. The installation of the hoisting and the compressing plants is under the supervision of an expert at this work.

The old Mill and the new.

The machinery of the old mill, which was still running at the date of my last visit, consists of the following: A Blake crusher, two 5-stamp batteries, with Tulloch ore feeders, one Victory machine for catching float gold and amalgam, and two Frue vanners with 4-foot corrugated belts. There is also a small belt hoister for raising the ore from the shaft to the mill. The old mill will be closed down and removed entirely when the new one is in operation. A splendid new mill was being constructed, and was within three or four weeks of completion on my last visit. The building, which is 66 by 59 feet in size, is a fine looking structure. It has a substantially timbered frame-work, and the outside is covered, roof and all, with corrugated sheet iron and painted. All the latest machinery is being installed under the superintendence of a first-class Colorado mill man. The crusher floor is about 130 feet above the vanner room floor, and the latter is 20 feet above the lake level. The machinery consists of the following: A sizing screen, a Gates crusher, six 5-stamp batteries, six Challenge ore feeders, six mercury traps, six Frue vanners and a clean-up pan. The crusher is size 4, which has a capacity of 150 tons per 24 hours. The stamps, which are of the Fraser and Chalmers pattern, weigh 850 lb. each, will drop eight inches 92 times per minute, and the order will be the standard one, viz., 1, 5, 2, 4, 3. The bosses, shoes and dies are manganese steel, and the cams and tappets chrome steel. One new feature in this mill is that the stem guides are all independent, so that any one or more stamps can be removed without stopping the rest of the battery. The mercury traps are of the Victory machine type. They consist of half cylindrical troughs at the lower ends of the apron plates, into which the slime runs. A cylinder, the surface of which is amalgamated, revolves in the trough and being partially submerged catches all float gold and amalgam. The vanners have 6-foot corrugated belts. Power will be supplied by two 100 horse power and

one 75 horse power boilers (the latter one from the old mill) and a 110 horse power Corliss engine. The boilers are to be connected, and two used at a time while the third is being cleaned, thus preventing the necessity of shutting down. All the machinery is from the works of the Jenckes Machine Co. of Sherbrooke, Quebec, except the crusher, which is from the Gates Iron Works, Chicago. The batteries, crusher, boilers and engine were set up, and the machinery for the vanners, etc., on the premises at the time of my visit. There are two steel tanks in the mill, one with a capacity of 2,500 gallons to supply the batteries, and one for the boilers. The water is pumped from the lake, which is only a few yards away. Two pumps will be used, one for each tank.

The chlorination and roasting plants were completed in September, 1896, and run for a few weeks that fall. An account of the process is given in the last report of the Bureau, so that it is not necessary to repeat it here.

A saw mill for cutting cordwood has been built on the property by Mr. Kendal of Rat Portage, who has taken a contract to supply the mine with 2,500 cords. The old mill burns six cords per day, and the new one is not expected to burn more than eight.

There is a total force of 38 men employed, 12 of whom are miners.

The following buildings are on the property: Three private dwellings, three sleeping camps, boarding camp, two horse stables, cow stable, chlorination plant house, roasting plant house, filter press house, mill building, blacksmith shop, saw mill, general office, assay office, shaft house, ware house, dressing room, powder house, ice house, cook camp, store house, and pump house at the lake. There are also the old boarding camp, the old mill building, and blacksmith shop, all of which will be torn down. A small dynamo with a capacity of 56 lamps (incandescent) lights the mill and other buildings.

A small steamer, the "Sultana," with 33-foot keel and a four horse power engine belongs to the mine, and runs between there and Rat Portage and other points on the lake.

All shafts and open cuts are suitably fenced, and danger notices posted up. The main and air shafts are provided with guard rails at the surface. The skip-road and ladder-way in the main shaft are being renewed. In the air shaft there is a suitable ladder-way for ingress and egress. By means of the air shaft and the winzes, good ventilation is secured to the mine. The upper levels are provided with doors to prevent the current from cutting across. For draining, there is a pump on the fourth level with a 4-inch intake, and one on the fifth with a 2½-inch intake. A suitable dressing room is provided near the main shaft.

Condition of the Mine.

I visited the Sultana mine on February 5, and make the following report on the recent progress of the same: No sinking has been done since my former visit, but the old hoist, with cable connecting with the bucket at the fifth level, is ready for the commencement of sinking, which will be about a month hence. No work has been done in the first or third levels since my last visit. The stope in the second level south has been driven 25 feet farther than the end of the drift, with a raise of about 25 feet. Between the third and fourth levels south the ore has all been stoped out for a distance of 30 feet south of the winze connecting these levels. The fourth and fifth levels have been connected by a winze 35 feet south of the shaft. Fifteen feet below the fourth level in this winze a drift has been run south 25 feet. The fifth level has been driven north 35 feet, and is being continued. Ten feet north of the shaft in this level a sump has been made. The new hoisting and air compressing plants are in operation, and the skip-road has been constructed to the fifth level. The new 75 horse power double-drum hoister is in operation, and the inclined tramway has been built to the mill.

Recent progress at the Sultana Mine.

The old stamp mill has been removed, and the new 30-stamp one, with all concentrating machinery, etc., is in full operation. The stamps first dropped on November 13, 1897.

The mine is in a satisfactory condition. The skip-road is well constructed, and properly guarded at the levels and at the surface. The ladder-way is in proper order, with the exception that the cable used in sinking must be kept to one side so as not to interfere with

No. 1 shaft of Otisse Mine, near Schreiber, p. 80.

No. 2 shaft of Otisse Mine at Schreiber, p. 80.

Tunnel at Empress Mine, p. 80.

Mill of Empress Mine, p. 81.

travelling up and down. All the machinery in the mill is suitably fenced, but the hoister, the compressor and the engine require to be provided with guard rails.

Burley Mine.

Burley Mine in Bald Indian Bay.

A rather interesting piece of work is being carried on in Bald Indian bay, near the Sultana island. Water locations adjoining the island have been taken up by The Burley Gold Mining Company of Ottawa, Limited, for the purpose of working what is believed to be a continuation of the famous Sultana vein, where it extends under water. I interviewed Mr. J. Burley Smith, manager and engineer of the works, on January 26 and got the following note from him :

The water at this point varies from 16 or 18 feet to 24 feet in depth during the year, and there is a depth of from 3½ to eight or nine feet of blue clay at the bottom. A crib 60 feet square and 24½ feet high, built of heavy timber, has been sunk to the bottom and a vertical shaft six by 12 feet in size will be sunk inside the crib. The latter was built on an island—two of which. the Queen Bee and Chien d'or, about half a mile from Sultana island, are owned by the company—and towed out by a steamer to where the shaft is to be sunk. It is being loaded with broken stone, of which 1,600 tons have already been put in, and 250 tons more will be required. The shaft will be sunk on the "long bore" system. Vertical holes will be sunk by diamond drill at each corner to a depth of about 120 feet, and about 20 or 22 other holes to a lesser depth over the area of the shaft. These will be filled with sand, which will be pumped out as required to a sufficient depth for a blast. The shaft will be lined with masonry to a depth of probably 20 feet below bed rock, depending upon the condition of the latter, and the mason work will extend up to the surface of the crib.

All the machinery is on the property ready for putting in place as soon as the work on the crib is sufficiently advanced. The machinery consists of an Ingersoll steam hoist, a hoisting cable, a three-drill air-compressor, three machine drills, a steam centrifugal pump with a capacity of 2,500 gallons per minute and an 85 horse power boiler. All this machinery will be accommodated on the crib. The ore will be raised in cages and dumped into barges alongside the crib, in which it will be taken to a mill, probably the Keewatin Reduction Works.

Work commenced about the end of August. Earlier in the season there was a force of about 50 men, including carpenters, etc., but the number is now reduced to 22 men. Camps have been built on the island belonging to the company. Mr. Smith has informed me that operations will cease on February 2, pending the decision of the courts regarding the title to the property.

Mines on Shoal Lake

Yum-Yum Mine.

On September 17 I visited the Yum-Yum mine. This property consists of location S94, containing 96 acres. It is owned by the Yum-Yum Gold Mining Company, Limited, of Ottawa. Mr. J. Burley Smith is manager of the mine. Gold was first discovered on this location in the summer of 1896, by a red man known as Indian Joe. He discovered what is now called vein No. 1, and found free gold on it. He sold the property to Dr. Edmison, of Rat Portage, who sold it again in November, 1896, to the Yum-Yum Gold Mining Company. Like nearly all locations in the Shoal Lake country, the landscape of the Yum-Yum presents a much wrinkled and broken-up appearance. The country rock is altered trap. The veins are peculiar in being for the most part very irregular, on the surface at least ; large splashes showing in places without any distinct walls, strong veins with good walls outcropping in other places, and being entirely cut off by a mass of country rock, then outcropping again, and so on. A diamond drill has been working on the property all summer testing all the veins, and its results go to show that the veins become more regular with depth.

Veins explored on the Location.

There are seven veins altogether, besides a number of small stringers. Five of the veins, viz., No. 1, 2, 3, 4 and 5, are parallel and run northwest and southeast. The other two, viz., G and H, are also parallel, but run northeast and southwest. As a general thing they cannot be traced continuously, or with a continuous

outcropping for any great distance, but only outcrop here and there where they have been stripped or the ground is elevated. Mr. F. Hockley, book-keeper at the mine, kindly showed me over the location, wherever any work had been done, but I am largely indebted to Mr. Smith for the following notes on the veins: No. 1 vein is at the northeast end of the location. It can be traced over most of the Yum-Yum property, and on part of the Nankipoo, which adjoins to the north. It varies in width from 18 inches to five feet. The vein matter is quartz and felsite, heavily mineralized and containing zinc-blende. A number of test pits have been sunk on this vein, and about 1,000 feet of stripping has been done. The vein branches in a couple of places. Vein No. 2 is next to No. 1. It can be traced across the location and varies in width from one to several feet. The vein matter is quartz. There is an open cut and a test pit 20 feet deep on the vein, besides several costeans. Vein No. 3, which is next to No. 2, is one of the best veins on the location. It can be traced for half a mile, and runs on the Nankipoo property. On the surface it varies in width from two to four or five feet. Where it cuts through a hill there is an open working 60 feet long and about 25 feet deep. This vein, like the others, has been tested by the diamond drill, and as a result a vertical shaft six by 12 feet in size is being sunk on the hanging wall side 33 feet from the vein. It was 31 feet deep on September 17. It was well timbered for a depth of 20 feet. The intention is to sink the shaft vertically for 120 feet, and then crosscut to the vein, working by 20-fathom stopes. The vein has been stripped and test-pitted at other points. No. 4 vein is not considered of much importance. It is only from one to two feet in width, and cannot be traced very far. But the assay goes from $17 to $18, which is higher than the general run. The vein matter is quartz, with a little country rock in places, well mineralized. There is a test pit and two costeans on it. I did not see much of No. 5 vein; it is said to be traceable on the Ontario Limited Property to the northwest. G and H veins are near the northwest end of the location. They can only be traced for a short distance. G vein, which is the more northerly, is exposed for about 20 or 30 feet near the shore on Bag bay. It then appears to dip under the trap, and outcrops again a short distance away. An open cut has been made upon it 40 feet long and about eight feet deep. There is also a test pit north of the open cut. The H vein has been stripped for 500 feet. There is another vein crossing this one at one point, and a large indefinite splash of quartz shows there. A little open cutting has been done at this place.

Diamond Drill exploration.

Mr. Smith gave me the following notes on the work of the diamond drill: On No. 1 vein No. 1 bore, made at an angle of 45° with the horizontal, crossed the lode where it was six feet wide. No. 2 bore, angle of 65°, crossed a lode two feet wide at a vertical depth of 112 feet. In the succeeding records the widths of lodes mentioned hereafter are the actual widths as calculated from the angle of the bore and the amount of quartz passed through, and the depths are the vertical depths. At a depth of 190 feet the same bore crossed a lode one foot wide, and at a depth of 214 feet crossed a lode nine inches wide. On No. 3 vein a bore at an angle of 43° at a depth of 88 feet crossed a lode 6½ feet wide. A bore at an angle of 62° crossed the lode 3½ feet wide at a depth of 165 feet. On No. 4 vein a bore at an angle of 70° crossed a lode 22 inches wide at a depth of 87 feet. No. 2 bore, angle 45°, did not strike the lode, but found a line of demarcation, which showed the existence of walls. On lode G the drill was stationed at different points. On No. 1 section, No. 1 bore, angle 53°, passed through a lode three feet wide at a depth of 25 feet. No. 2 bore, angle 71°, crossed a lode 15 feet wide at a depth of 30 feet. No. 3 bore (vertical) cut the lode 8½ feet wide at a depth of 45 feet. On No. 2 section (new position of drill), No. 1 bore, angle 60°, at a depth of 72 feet cut the lode 2½ feet wide. Between G and H veins there is a wide valley with steep bluffs on either side, and Mr. Smith believes that down below there is a large lode, the walls of which correspond to the bluffs. A bore is being put down at an angle of 40° to crosscut this supposed lode, and also to cut the H vein. It was in 120 feet, measured along the bore on September 17.

When the shaft on No. 3 vein has been sunk 120 feet it is the intention to construct a wire cable way from the shaft to the lake, a distance of 1,223 feet, and to convey the ore to barges in which it will be carried to the Keewatin Reduction Works. A horse whim is to be put at the shaft soon for hoisting.

Good wagon roads have been constructed to different points on the location. A dock with 40 feet frontage has been built on the southern shore of the location, and it is intended to construct another in Bag bay near G vein.

There is a force of 14 miners at work, four of whom are diamond drill men.

The buildings consist of the following: Powder magazine, ice house, blacksmith shop, sleeping camp with accommodation for thirty men, dining camp, cook house, stores, assay office, office and manager's dwelling.

The management of the mine has been recently transferred to Mr. R. H. Flaherty, formerly engineer at the Foley. I met Mr. Flaherty in Rat Portage on January 4 and got the following information from him as to the progress of work at the mine: The diamond drill has ceased work. The shaft on No. 3 vein has been sunk 86 feet and is being continued. It is believed that they are quite near the vein, as the selvage appears to have been struck. There is a force of ten miners, working one shift only.

Recent operations.

The Mikado Mine.

Reports on the Mikado mine are contained in previous reports of the Bureau of Mines. I visited the place on June 28 and on September 16, and made the following notes on the extent of the workings and machinery, etc., on the property:

The main shaft, which is six by 12 feet in size, has been sunk 124 feet. Sixty feet from the surface a crosscut has been driven west 38 feet. From the end of the crosscut a level has been driven north along the vein 170 feet, and one south 175 feet. One hundred and twenty feet from the surface a crosscut has been driven west 56 feet, cutting the vein 24 feet from the shaft. In this crosscut a level has been driven along the vein north 154½ feet and one south 96 feet. Near the crosscut on No. 1 level the ore has been stoped out overhead for a length of 25 feet, and with an average raise of seven feet from the roof of the level. A raise 18 feet from the floor has been made near the crosscut in the stope. The vein shows an average thickness of about four feet in the mine. Mr. Doidge, the assistant manager, intends to do all stoping overhead. The ore will be stoped out all along for a height of about seven feet above the roof of the level, and a staging then constructed. All ore after this will be piled upon the staging and let down through chutes to the cars in the level below as required.

Workings in the main Shaft.

An open cut 150 feet long, 20 feet deep and from five to 10 feet wide, has been made on the surface of No. 1 vein. On No. 2 vein an incline five by eight feet outside the timber has been sunk to a depth of 85 feet. This incline was full of water at the time of my last visit, as they were waiting for a pump. Mr. Breidenbach however told me that the vein, which was only two inches wide at the surface and assayed $200 per ton, kept this size and value for a depth of 50 feet, and at that point began to widen until at a depth of 85 feet it was six feet wide and the assay value decreased almost in proportion. But still it assays high enough to make a good paying lode. On the surface of No. 2 vein an open cut has been made 65 feet long, about 12 feet deep and four or five feet in width. A little stripping has been done on the vein north of the incline, and about 100 feet northwest of the latter a test pit has been sunk 25 feet. This vein can only be traced 70 or 80 feet, apparently. Six men have been prospecting the locations since August 1, and a number of small veins have been found, but not enough work has been done on any of them to be able to judge fairly of their value. One of the recent finds, known as No. 3 vein, is now being tested. This vein is on 147D. It is from two to eight inches in width, runs nearly east and west, and can be traced about 300 feet. A test pit is being sunk upon it, which was eight feet deep on September 16. A few shots have been put in at other places on the vein. It is nearly all capped over with earth,

Other workings at the Mine.

etc., and has to be stripped in order to be exposed. The vein matter is coarsely crystallized blue quartz, slightly charged with copper pyrites. There is a few inches of trap containing more or less quartz alongside the vein.

Cost of Sinking and Drifting.

Sinking and drifting are done by contract. Mr. Breidenbach gave me the following figures showing the cost of such work: A four by six foot drift through quartz costs $12 per foot; through trap and quartz mixed, $9 per foot. Sinking the five by eight foot incline on the vein costs $16 a foot. The main shaft, which is six by 12 feet and driven vertically through country rock, costs $30 a foot. This includes timbering and manway.

Hoisting and Tramming.

In the main shaft cages are used in hoisting. Two cages, made by the Ingersoll Rock Drill Co. of Montreal, run in adjoining divisions of the shaft. They are connected so that one going down balances the other going up, thus economizing power. A 30 horse power hoisting engine, made by M. Beatty & Son, Welland, operates the cages. In the incline or No. 2 shaft hoisting is done by windlass and bucket. Two buckets are in use. It is intended to have a hoister at this shaft right away. There is 830 feet of tramway on the surface, and 500 feet in the mine. A tramway 480 feet long has been constructed from No. 2 shaft to the mill. There is also an inclined tram road 250 feet long from the dock in Bag bay to the mill, and a horse power whim at the upper end for hauling the ore to the latter place from the barges when ore from other properties is to be treated. Eight self-dumping cars, made by Woodside Bros. of Port Arthur are in use.

Pumping and Ventilation.

A Northey force pump for draining the mine has been placed on the second level in the main shaft. Korting's aspirator pipes have been placed in all the levels in the main shaft for ventilation purposes. These are ordinary 2-inch diameter iron pipes which extend down the shaft and branch off into the crosscuts and levels. After a blast and the miners have come to the surface, a jet of steam, from a small nozzle which enters a short distance into the open mouth of the aspirator pipe at the surface, is turned on for a few minutes, and, creating a powerful suction, carries a large quantity of air down the pipe and into the ends of the drifts, driving all smoke and foul gases up the shaft. The jet is then turned off, and the pipes being heated a gentle but natural current flows in the opposite direction up the pipes, thus giving ventilation for a considerable time.

The Stamp Mill.

A mill building 50 by 60 feet in size has been erected. It has been in operation for some months. The milling machinery consists of a Gates crusher, four 5-stamp batteries, two mercury traps and a clean-up pan. No concentrators are used, as it is intended to treat the whole product of the mill by the bromo-cyanide process after amalgamation. With the exception of the traps, which are home made, the milling machinery is all from Fraser and Chalmers of Chicago. The crusher has a capacity of 60 tons per 12 hours. The stamps are 850 lb. in weight, and drop eight inches 90 times per minute. A travelling derrick has been placed above the stamps for conveying heavy pieces of machinery. For power purposes there are two 70 horse power boilers, and one 70 horse power engine for milling; and a 30 horse power boiler for the hoister; all from the Waterous Engine Co., Brantford. There is 250 feet of 4-inch suction pipe running from the lake to the mill for water supply. The pump in the mill is 22 feet above the lake level, and it pumps into a tank on the crusher floor. Fire hose is kept near the tank in case of fire.

Condition of the Mine.

The condition of the main shaft, including the man-way, is satisfactory. The latter is cased off from the hoisting compartment, and is provided with ladders and platforms suitably arranged. The surface of the shaft is properly guarded. No work was going on at No. 2 shaft at the time of my visit. There is no dressing room at the main shaft and it will be necessary to construct one; instructions were given to this effect. Copies of the Mines Act were left with Mr Theodore Breidenbach, general manager of the mine, and with Mr. Alfred Doidge, assistant manager.

On June 28 there was a total force of 75 men, 46 of whom were in the mine. On

September 16 the force was about the same. Fifteen wood choppers were employed to supply cordwood for the mine. A number of wagon roads have been cut through the property for hauling the wood.

The buildings consist of the following: Assay office, general office manager's dwelling, cooking camp, two sleeping camps, extra dwelling house, hoisting engine house, two shaft houses, boiler house, mill building, powder house, ice house, stable and blacksmith shop.

A viaduct 20 feet above the ground and 50 feet long connects the main shaft house with the mill. The cars can thus be taken from the levels in the mine to the crusher in the mill.

The steamer "Mikado," belonging to the company, runs from Rat Portage to the landing in Bag bay, where a good dock has been constructed. The mine can be reached more quickly from Rat Portage via Helldiver bay, whence a good road a mile long runs to the mine.

Meeting Mr. Breidenbach in Rat Portage on January 7, I got from him the following notes on the progress of work at the mine: In the main shaft most of the energy has been confined to stoping until lately, when sinking has been commenced again. No. 2 shaft has been sunk a vertical depth of 105 feet and drifting commenced at the bottom. The vein is six feet wide there, shows free gold and assays $10 per ton. One curious feature is that the visible gold in No. 2 shaft is in nuggets, while in No. 1 it occurs as leaf gold. On No. 3 vein the shaft has been sunk 45 feet and is being continued. It has enlarged from several inches at the top to five feet at the bottom, and the assays run from $1 at the surface to $7 at the bottom, increasing gradually. On 149D a shaft is being sunk on a vein showing 18 inches of quartz. This is parallel to the main vein. The shaft is 40 feet deep and is being continued. The assays are poor. An air compressor with a capacity of six drills has been installed, and three drills are employed in each shaft, i.e., No. 1 and 2. A 12 horse power hoister with iron buckets has also been placed at No. 2 shaft.

Recent progress at the Mine.

I visited on September 17 the Gold Coin and Monarch mines in Helldiver bay, but found no work going on at either of these properties.

Gold Coin and Monarch Mines.

Ontario Limited.

On September 18 I went over to the Ontario Limited property, which is situated on the southern extremity of the long arm running south from Bag bay. It is owned by the Ontario Limited Gold Mining Company of London, England, and consists of locations S74 and D203 and 204, aggregating 111 acres. Col. W. T. Engledue is president of the company, and his son C. W. Engledue is manager of the mine. Gold was first found on this property by a man named Israel Gagne in 1896. Clinton Markell of Duluth bought the property, and sold it to the present company in April, 1897. Two prospectors had been employed prospecting the locations from June 10 to August 21 of the past year. Camps were built and work on the veins commenced on the last of August. The formation is trap and coarse grained diorite. There are thirteen veins altogether, twelve of which are parallel and run northwest and southeast. Mr. C. W. Engledue showed me over the property, and with his assistance I made the following notes:

Ontario Limited property.

No 1 vein, which is farthest north, is on S87. It can be traced 900 feet, and ranges in width from three to seven feet, averaging about 4½ feet. The vein matter is quartz and felsite, chlorite schist occuring also in place. The quartz is well charged with pyrites. The vein has been stripped in several places, and three test pits sunk upon it, one at the south end five feet deep, and two near the north end, one of them eight feet deep. No. 2 vein, on the same location, but farther south, can be traced 420 feet. It is from two to six feet in width. The vein matter is mostly quartz, but felsite occurs also. A little stripping has been done on this vein. No. 3 vein, which is mostly on D204, has been traced about 350 feet, but is only about 12 inches wide. No. 4 vein appears to be a felsite dike. It has been traced for 500 feet, and shows a width in one place where uncovered of 12 to 14 feet. A test pit has

Mineral bearing Veins on the Locations.

been sunk on it to the depth of nine feet, and fifty tons of ore taken for a mill run. Farther north a little stripping and costeaning has been done. Veins No. 6, 7 and 8 all join at one point apparently, and No. 6 only continues past the junction. These are on location D204, near the centre. No. 8 is merely a stringer eight or ten inches wide, and has not been traced except for a short distance at the junction. No. 7 has been traced about 200 feet, and varies in width from two to four feet. It is nearly all quartz. Several test pits have been sunk a few feet upon it. No. 6 vein has been traced about 100 feet, and is a little wider than No. 7. A test pit has been sunk at the junction to a depth of 25 feet, and north of the pit an open cut has been made on the vein (No. 6) about 50 feet long and four or five feet deep. Fifty tons of ore were taken from this latter pit also for a mill run. No. 5 vein is traceable for about 100 feet and is from one and a half to three feet in width. It has been stripped in two or three places and a few shots put in. On No. 9 vein two test pits have been sunk four and seven feet deep respectively, and 15 feet apart. The vein shows a width of two feet, but has not been traced beyond these pits. No. 10 vein is not of much importance. It has been traced only 40 or 50 feet. Vein No. 11, which is on the southern part of D203, is 17 feet wide. It has been traced 220 feet. Five test pits several feet deep have been sunk upon it. The vein matter is quartz, felsite and schist, and contains a large amount of pyrites. No. 12 vein is close to No. 11, to the south. It is traceable for the same distance, and is five feet wide. The vein matter is probably of the same nature. It consists of quartz and green schist. Two test pits have been sunk upon it. There is a small quartz vein which runs up the face of a steep bluff on D204, and on to the Yum-Yum property, but no work has been done upon it. From the presence of felsite in a number of these veins, it appears that they are of a dike origin. On page 118 of the 1896 Report of the Bureau Dr. Coleman states that felsite dikes are frequently found in the Huronian rocks near the contacts with the granite, and that the quartz which they often contain is an after deposit filling in the fissures that are probably caused by the cooling and contracting of the felsite, or by the subsequent shearing along the old fracture.

Veins No. 4 and 6 are considered the best on the property, and, as stated before, fifty tons of ore have been taken from each for a mill run. Whichever turns out the richest will be sunk upon and developed.

There are seven miners at work, including two who are still prospecting the property.

The buildings consist of a boarding camp, a blacksmith shop and a stable.

Cornucopia Mine.

Cornucopia Mine.

On September 20 I visited the Cornucopia mine on Cedar island in Bag bay. This mine has been shut down all summer owing to trouble between the owners, but I have learned that the difficulties have been adjusted and that operations have commenced again.

Alexander M. Hay of the Dominion Gold Mining and Reduction Company informed me that the property has been purchased by the Cedar Island Gold Mining Company of Ontario, Limited, and Mr. Hay is acting as manager of the property at present. The ore bodies consist of a fair sized vein and a number of stringers. A vertical shaft had been sunk 75 feet by the former owners, Messrs. Kendall and Whiting of Rat Portage, and the present company, who commenced operations on December 20, 1897, have been drifting and crosscutting since. There is a 20-foot crosscut at the bottom, and drifts have been run east and west 10 feet and 15 feet respectively. The main vein has not been struck at the bottom yet, and they are drifting along a stringer for the purpose of reaching this body. There is a steam hoister and a bucket for hoisting. The buildings consist of a boarding camp, blacksmith shop, engine house, shaft house, ware house, barn and dry dock.

Cameron Island Mine.

Cameron Island Mine.

In the central part of Shoal lake there is a small island known as Cameron island, off the northwest shore of Stevens island. This has been the scene of mining activity for the past few months, and according

to late reports bids fair to be a working mine in a reasonable time. The island is mining location S170, containing about 16 acres. Mr. J. J. Foster of Toronto owns the property, and Mr. W. M. Caldwell of Rat Portage is manager. It was discovered by Ralph McInkster and W. J. Cameron, of Rat Portage, and sold to Mr. Foster. Work commenced on July 29, 1897; before this only a little stripping had been done. I visited the place on September 20, and, going over the island with Mr. Caldwell, made the following notes :

The country rock on the island is green trap, quite coarse grained in some places. The rock is covered over with a thick capping of earth, roots, etc., and there is a growth of thick brush and small trees, which on the whole is difficult to remove and makes the work of stripping a slow and laborious process. Four veins have been discovered so far. The first three are parallel and have a strike of about N. 30° E. No. 1 vein, which is farthest east, has been traced about 150 feet. The average width is two feet, and the dip nearly 45°. The vein matter, which was much decomposed on the surface, appeared to consist of green schist or felsite and quartz. About 20 feet of open cutting to a depth of four or five feet has been done near the water's edge, and farther south a test pit and some stripping. No 2 vein is 20 feet west of No. 1. It has been traced 586 feet, being exposed only on both sides of the island. The average width is 2½ feet. The vein matter is the same as No. 1. About 30 feet of open cutting has been done at the north end, and a little stripping at the south end. Eighteen tons of ore were taken from these two veins for a mill run, and it ran $18.60 per ton. The main vein is No. 3. It is 100 feet west of No. 2. What appears to be the outcropping of this vein occurs at both sides of the island, a distance of 700 feet, and near the centre also. This ore body is a felsite dike. Both walls are uncovered at the north end only, where it shows a width of 16 feet. A six by 10 foot shaft is being sunk near the centre of the island, and a depth of 17½ feet was reached on September 20. The shaft is sunk on the foot wall, the hanging wall not being reached. At the bottom of the shaft, where decomposition has not gone far, the vein matter is quartz and felsite, with a horse of country rock in the centre. The amount of quartz is increasing with depth. There is a very large per cent. of pyrites all through the vein matter. About 12 feet of the dike has been stripped at the south end. The covering is four or five feet of earth and gravel. Near the west side of the island is a small vein of quartz six inches wide. This is No. 4. It carries galena, copper and iron pyrites and free gold. It has been traced about 100 feet, and has a strike of nearly east and west. A test pit has been sunk to the depth of 10 feet.

Formation, Veinage and Works.

Just as I was leaving the men were stripping an outcropping of quartz and felsite on the northwest part of the island. The exposure was made by a tree blowing down and carrying the earth away in its roots.

The force consists of six miners at present. The buildings comprise a blacksmith shop, a powder house and a boarding camp, which have just been built.

The Engledue Concession.

On September 25 I visited block B of the Engledue concession, which comprises 15,000 acres in that part of the Western Peninsula lying south of Carl bay in Shoal lake. This is being prospected by the Ontario Gold Concessions Limited, of London, England, and Mr. T. R. Deacon, O.L.S., of Rat Portage is in charge of the work. A small portion of the northern part of this property had been surveyed into mining locations after it had been conceded to the English company, and before the surveyors were notified by the Department not to survey upon it. This was nevertheless retained as part of the concession, and the remainder of the 15,000 acres has been surveyed by Mr. Deacon into lots in order to facilitate prospecting and make it more systematic. Lines were run east and west across the property one mile apart, dividing it into ranges. These ranges were subdivided by lines running north and south 20 chains apart, thus dividing the hitherto unsurveyed part of the concession into lots one mile long and a quarter of a mile wide.

Exploration on the Western Peninsula.

Twenty prospectors were employed and divided into two camps of ten in each. The camps were situated so that each was in a central position with regard to its own portion of the country to be prospected. The men were set to work in pairs, a certain number of lots or locations being allotted to each two men. They were to work over the lots backward and forward, blazing their way all the time until the lots were thoroughly prospected. The blazing was done so that the manager might go over any portion of the men's work at any future time. The men were paid by the day, and by way of encouragement a bonus of $50 was given to anybody that found a vein assaying $20; if the vein assayed $200 the bonus was $1,000; and for assays ranging between these limits the bonus was in proportion.

Prospecting Operations on the Block.

The country is almost entirely covered by small trees and moss, making prospecting none too easy. The formation is trap, felsite and granite, the contacts not yet having been determined. So far a number of the locations and lots have been explored. Of the latter the following is the list: Lots on range B, 15 to 20 inclusive; on range C, lots 7 to 18 inclusive; on range D, lots 13 to 18 inclusive; on range E, the same, and on F, 19, 20, 21 and 24.

I went over a portion of the property with Mr. W. F. Laing, who is foreman of the work, and examined some of the discoveries. At one point there is a vein of quartz containing a little country rock seven or eight feet wide, which can be traced 300 feet. Two test pits have been sunk upon it about 200 feet apart; one is eight feet deep and the other four or five feet. The vein is mostly covered over with earth, etc., but shows a good deal of quartz where it is exposed. About half a mile west of Dead Man portage, a reef of quartz and granite crosses a small peninsula which runs into Carl bay. It consists of a number of stringers in some places, and at others forms a solid mass of quartz. The walls are indefinite, but it is from eight to 20 feet wide, and about 250 feet long. A little stripping and blasting has been done at one end where a considerable amount of quartz shows. On lot 24, range E, there is an exposure of decomposed trap. It has no definite walls, nor can it be traced any distance. A test pit is being sunk upon it, but will likely be discontinued as there is not much of a showing. Close to the former there is a vein running east and west which has been traced 500 feet. A test pit is being sunk upon it, and it shows a width of four or four and a half feet at that point. The vein matter is blue quartz, hornblende schist and trap, all well charged with pyrites, and decomposed a little at the surface. There is about 12 to 18 inches of quartz. This appears to be a better vein than usual, and sinking will be continued for some time yet. There are some other leads on the property of more or less importance that I did not see, but none of them have been tested yet. Very little assaying has been done so far, and no very good results have been obtained from the assaying that has been done.

Discoveries of Gold-bearing Veins.

I saw Mr. Laing in Rat Portage on January 5 and was told by him that a shaft had been sunk 30 feet on one location, and was being continued. On another location a shaft was being sunk and had reached the same depth. A diamond drill procured for the purpose has been started on this latter location.

Other Properties.

I left the Engledue Concession on September 21 on my way to Rat Portage. Stopping at a large island east of the Western Peninsula I saw what appeared to have been a camping place recently, and going inland found that considerable work had been done on a large vein running northeast and southwest. Two test pits had been sunk about 200 feet apart. One was 10 by 10 feet square and eight or nine feet deep. About eight feet of quartz showed, with distinct walls. The other pit was smaller and about eight feet deep. Felsite was the chief constituent of the vein in this pit. The country rock was green schist.

Island locations east of the Western Peninsula.

Paddling along the north end of Shammis island, we came to a place where the outcropping of a large felsite dike was exposed on the shore. Some blasting had

been done here, and going inland I found a pit on the same dike about 100 feet from the shore. The dike was mostly quartz at this point. The pit was only six feet deep.

Mines near Rat Portage

Triumph Mine.

The Triumph mine, an account of which appears in the last Report of the Bureau of Mines, and which had lain idle for about a year, is again in operation. Mr. C. S. Morris was the original owner of this property. Messrs. E. W. Barnes and A. B. Upton bought it from Mr. Morris, and in September, 1897, they sold it to the Triumph Gold Mining Company, with head office at Alpena, Michigan. The recommencement of work dates from July 1. Mr. J. S. Rayburn is superintendent and Mr. Charles Brent, M. E., of Rat Portage is engineer. I got the following notes from Mr. Rayburn in January :

There are about 30 veins on the property. Five test pits, 10 feet each, have been sunk on the different veins. A shaft is being sunk which is now 113 feet deep, and a contract has just been let to sink it to 200 feet. No drifting has yet been done, nor will there be until this last contract is completed ; then it is likely that 100-foot and 200-foot levels will be established. There is an old Tremaine steam 2-stamp mill, which was put up by former owners, but is now lying idle. A new hoist is just being set up. The buildings consist of a new shaft house, ore house, boiler house, mill building, blacksmith shop, dressing room, office, boarding house to accommodate 25 men, and a barn. There is a force of 10 men, including seven or eight miners.

Properties in Jaffray and Haycock townships.

On September 25 I hired a saddle horse and made a trip into the country for the purpose of examining the Scramble and other mines in that vicinity. There are quite a number of properties which have been worked more or less in Jaffray and Haycock townships near the Scramble. I visited the later place first. It is situated about four miles from Rat Portage, east. As neither Mr. Halstead nor Mr. Partridge was present at the time, but were expected later on in the day, I went about three miles further to what is called the Black Sturgeon mine, intending to return to the Scramble later.

Black Sturgeon Mine.

Black Sturgeon Mine.

The Black Sturgeon comprises lots 11 and 12 in Jaffray township. Andrew Benson is owner and manager. The discoveries were made by Mr. Benson in 1896. The country rock is granite and slate, and a little trap occurs also. Considerable prospecting has been done and quite a number of veins have been found. No. 1 vein, on lot 11, is believed to be a contact between the granite and schist, and has a strike of northeast and southwest. Two shafts have been sunk upon it about 1,200 feet apart. No. 1 shaft is 42 feet deep. The vein is covered at this point with 38 feet of loose material, clay, boulders, etc., and as it does not outcrop near by the position of the shaft was got by calculation. It was intended to be directly on the vein, but unfortunately it struck the latter just to one side. The shaft was enlarged to the width of the vein and sinking continued. A considerable amount of water was coming into the shaft, and operations were suspended at the time while waiting for a pump. The shaft was well timbered to the bed rock and a new shaft house had been built over it. No. 2 shaft, which is northeast of No. 1, is seven by nine feet in size and 36 feet deep. It was sunk last winter by a Winnipeg company which had an option on the property, but Mr. Benson has since bought the option back. Nothing was being done in this shaft.

Besides these shafts there are on lot 12 four or five test pits on different veins, ranging from four to 10 feet in depth. The shaft and test pits were not fenced, and I called the manager's attention to the necessity of so doing. He has informed me since that he had fenced them as requested. There are six miners employed on the property, but the work that is being done is only prospecting. Good buildings have been constructed, and consist of two shaft houses, boarding camp, blacksmith shop, dwelling house and dressing room.

Princess Mine

The Princess mine is also in this section, and is about two miles from the Scramble.

The Princess Mine.

The nearest railway station is Rossland, which is three miles from the mine—one and three-quarter miles by water, and one and a quarter by land. The property is owned by the Princess Gold Mining Company of Ontario, Limited. Work commenced here about the first of May and three or four men have been employed all summer. The formation is similar to that of the Black Sturgeon. There are a number of small outcroppings on the property, but likely only a few veins. The main vein shows on the top of a hill about 100 feet high. There is a small outcropping of white quartz which showed free gold plentifully, and a shaft has been sunk upon it. It is four by eight feet inside the timber and 65 feet deep. The quartz disappeared about 15 feet from the surface and Mr. Collins, the manager, thinks that it is on the foot wall of the shaft. Crosscutting to the south or foot wall side has commenced in the bottom for the purpose of striking it again. Felsite was struck shortly after losing the quartz, and there is about five feet of it in the bottom of the shaft, which carries a certain amount of gold. About 50 or 60 feet north of the shaft is a felsite dike, containing a little quartz, about two feet wide, which has been traced a few hundred yards with a strike of northeast and southwest. It is expected that this dike, which is dipping towards the main shaft, will join the latter farther down or else be worked from it by a short crosscut. A couple of small test pits have been sunk at other places on the property. The buildings consist of a cooking camp, a sleeping camp and an office. There were two miners at work during my visit, and Mr. John Collins was manager.

Scramble Mine.

Having finished with the Princess, I returned to the Scramble, descriptions of which have been given in the fifth and sixth Reports of the Bureau. I went over the property and looked at most of the veins, of which there are eight altogether. The main vein has a strike of northeast and southwest and can be traced 650 yards, and according to report much farther on adjoining properties. The vein appears to be in two parts at the surface; there is a quartz stringer a foot wide showing at one place and 15 feet from this the band of mica schist or fahlband, as Dr. Coleman describes it, 27 feet wide; but it is likely to be all the one vein, as the only distinction is that the 15 feet between does not carry any gold to speak of at the surface. The vein maintains its width right along, but the quartz stringer itself is only traceable for 150 yards. About 70 or 80 yards southeast is a small quartz vein two feet wide. It only shows in one place, where a small test pit several feet deep has been sunk. Much free gold was found in this vein. A few hundred yards southeast of No. 1 vein is a parallel quartz vein which has been traced and stripped for 20 feet, and is from 18 to 30 inches wide. This was discovered last June. It does not carry much pyrites, but shows gold on panning. About 40 feet north of this is another parallel vein from four to five feet wide, which has been traced 150 or 200 yards. Stripping and test pitting have been done in several places along it. There are also several small quartz veins a few inches wide running in different directions close to these veins. A few hundred yards south of the main shaft a test pit has been sunk 11 feet, in a place where two veins intersect. They do not outcrop any place else, but it was concluded from testing with the "mineral rod" that one runs to the main shaft and the other is parallel to the main vein. Another ore body which I did not see is described as a large felsite dike on the north side of the property, and which was not considered of much importance at the time.

The Scramble Mine.

Two shafts have been sunk on the main vein. The main shaft, which is eight by 10 feet inside the timber, is 85 feet deep. Fifty feet from the surface is the first level. A fork has been driven 14 feet into the foot wall, and from the hanging wall a crosscut has been driven northwest 57 feet. From the end of the crosscut to the fork is a distance of 79 feet, which appears to be all vein matter, as gold can be found by panning in different places.

Shafts on the main Vein.

in the crosscut. It is uncertain just what the width of the pay ore is, but there is about 30 feet of it at least and probably much more. In a recent interview Mr. Halstead told me that an expert had been examining the mine lately and got an unexpectedly high average assay in the crosscut. Near the shaft there is about 12 feet of the vein which carries more quartz than usual, and is richer than the rest also. It is all well charged with copper and iron pyrites. About 200 feet from the main shaft on the same vein is No. 2 shaft. This has been sunk 52 feet and discontinued. Seven or eight hundred feet farther on an open crosscut has been made through the earth down to bed rock, but this is now partially filled again. Considerable stripping has also been done on the vein. There is a large seepage of water in the main shaft, and a Northey pump with a capacity of 65 gallons per minute has been placed 72 feet down for drainage.

The hoisting machinery consists of a 12 horse power hoister made by the A. R. Williams Machine Company of Toronto, and a 14 horse power upright tubular boiler. Two tanks are used for water supply, the water from the shaft being used. It is pumped into a 34-barrel tank outside and allowed to settle. It is run from there into an 8-barrel tank in the engine house.

The shaft is provided with a suitable manway to the first level, with ladders and platforms as required by the Mines Act. The surface is provided with a suitable guard rail. The bucket way at the first level is not fenced at the north side, and a temporary guard rail must be placed there that can be removed when necessary. No work was going on in the main shaft when I was there, as the miners were waiting for the pump to be fixed. There was a force of five miners, but more would be required when operations started again. Fine, neat and roomy buildings have been constructed. They consist of sleeping camp, dining camp, two dwelling houses, store, dressing room, stables, driving shed, ice house, powder house, shaft and hoist house and blacksmith shop.

Condition of the Mine.

I met Mr. Halstead on January 5 and got from him the following information : Seventy-five feet from the surface in the main shaft a drift has been run northeast 21 feet. Nothing else has been done in the mine, and work has been discontinued for the present for a short time. The main vein has been stripped 116 feet more, close to the main shaft, and free gold was found all along. A test pit has been sunk also. Five hundred feet south of the main vein a quartz vein has been stripped 300 feet. It was six feet wide and carried free gold.

Recent Workings at the Mine.

Gray Eagle Mine.

About four miles east of Rat Portage, south of the railway track, is a property called the Gray Eagle mine, which is owned and worked by the International Gold Mining and Development Company, with head office at Cleveland, Ohio. Mr. John Kennedy of Rat Portage is manager of the mine. The country rock is green schist and trap. The ore bodies are large felsite dikes which contain a few stringers of quartz. There are two or three of these dikes on which some work has been done. The main dike is traceable for several hundred feet and is 17 feet wide at the shaft. The strike is northeast and southwest. A six by 12-foot shaft is being sunk which was 32 feet deep on October 1, the day of my visit. Mr. Kennedy told me lately that it had been sunk to a depth of 50 feet, which fulfilled the contract, and work has discontinued for the winter as the company does not want to go to the expense of building camps at once. But it is stated that in the spring operations will be resumed and the shaft carried to a depth of 200 feet. The contract just finished was to sink from 30 to 50 feet at $22.50 per foot. It was simply the continuation of an old shaft. Mr. Alan Macdonald of Rat Portage is the contractor and had a force of seven men at work, including four miners. A few hundred feet southwest of the shaft there appears to be another dike joining the main one, but no work has been done upon it. About 100 yards northwest of the main dike is another of apparently the same size. A test pit had been sunk eight feet on it previous to the commencement of work by the present company.

Gray Eagle Mine.

Keewatin Reduction Works

One concern which has every promise of giving a good impetus to mining and developing when it is completed is the Keewatin Reduction Works, mentioned by Mr. Blue in the sixth report. These are situated in Keewatin, a small village three miles from Rat Portage, on the Lake of the Woods, and are owned by the Ottawa Gold Milling and Mining Company of Ottawa, Limited. The property consists of 25 acres.

Objects of the Company.

The company is formed solely for the purpose of doing custom work in the treatment of ore. and does not intend to operate any mines of its own. It intends for one thing to furnish a means of enabling prospectors to have their ore milled as it is mined, thus allowing them to pay the cost of mining from the beginning and dispensing with the necessity of waiting for capital to develop their properties. This means the opening up of a great many properties which might otherwise remain idle for a long time. But the company also intends to aim at doing away with the necessity of miners erecting their own mills, by making arrangements to buy or treat all their ores. This latter will apply particularly to the Lake of the Woods country. One of the important features of the works is a first rate sampling apparatus by which all the ore brought there can be sampled with absolute fairness, and then assayed and the value given to the owner before any milling is done. The cost of treatment of the ore will be approximately proportional to the assay value. Or the ore may be bought outright and the price paid for it the gold value minus the cost of treatment. Poor ores, which run under $3 or $4 to the ton, will be treated with no profit, or perhaps at a direct loss to the company ; but indirectly there will be a gain, as it will encourage the development of mines and so increase the business, as in many cases the ore is poor at the surface but rich farther down.

Features of the Mill.

The works will consist of a sampler and crusher, a stamp mill with concentrating machinery, and later on a chlorination plant, so that any kind of gold ore can be treated. Steamers and barges to convey the ore from the mines also form an important feature. The machinery is all to be of the most improved class and of the best quality. I visited the place on September 29 and was shown over the property by Mr. Frederick T. Snyder, the superintendent. The work of building was then being pushed on as fast as possible. It was expected to have the sampler ready in a few weeks, and the mill in the spring. The sampler and storage building, which is 40 by 110 feet in size, was nearly completed. It is very substantially built with heavily timbered frame work, well braced, and diagonal sheathing. The mill building, the foundations and frame work of the timber of which was completed, is to be of the same size and close by. The chlorination plant had not been commenced yet. The foundations of the standards for the cable-way were nearly completed also.

Transporting of Ore.

The ore will be transported from the mines in 30-ton barges, eight of which have been built, and thirty or forty more will likely be constructed in the spring. From the barges it will be carried over a 430-foot cable-way to the works. As these are situated on a branch of the Winnipeg river, and the railway comes between them and the lake, the ore has to be carried over on this cable-way. The cable is stationary. Three two-ton skips are in use at a time ; one travelling over while the others are being loaded and emptied respectively. One skip will cross per minute. The skips will discharge into a W-bin of 60 tons capacity, above the crusher.

Milling and Sampling Plant.

The crusher, which is a Blake, crushes to sizes of one and a half to two inches in diameter, and has a capacity of 24 tons per hour. In this crusher the outer jaw moves and has a parallel motion. The size of the opening is 12 by 20 inches. The crushed ore passes over a sizing screen of one inch mesh, and the "fines" go to the sampler. What passes over the screen goes to the rolls, and then over the screen with the crusher product again, and so on. Every bit of the machinery has the latest features in improvements that have been made. The Cornish rolls, which are 36 inches in diameter by 10 inches across the face, have a capacity of 10 tons per hour. They crush to less than an inch. They are the heaviest type of rolls, the whole machine weighing 26,000 lb. The

springs give a pressure of 8,000 pounds per inch, or 80,000 pounds on the whole roll. There is a feeder or distributing box which spreads the ore evenly along the rolls and prevents uneven wear. The sampler consists of a pan shaped like a gold pan, and revolving on a horizontal axis. In the splayed side there is a radial slit nearly the length of the side. The pan makes 30 revolutions per minute. The crushed ore or "fines" runs from a chute into the revolving pan and into a bin below. At each revolution the slit comes underneath and the stream goes through into another bin: this is the sample, which is dealt with separately. Now there are two different principles of sampling; one is to take a portion of the stream of ore all the time, and the other is to take all the stream a part of the time. This latter is recognized now by experts as being the more reliable principle, and it is the one which is involved in the above apparatus. The sample is thoroughly mixed and quartered, being gradually reduced to a workable quantity and then ground fine and mixed again. This is divided; one half given to the customer for a check and the other half assayed by the company.

Storage Bins.

The ore from the sampler is conveyed on an endless rubber belt 20 inches wide, running horizontally to large W-shaped storage bins which have a capacity of 2,000 tons, and provision is made for indefinite increase. The bins are divided into compartments, so that each quantity of ore can be kept separate. The W-shape which means that there are two outlets at the bottom, enables any one bin to be utilized without the necessity of waiting until it is entirely emptied, by throwing the remaining ore into one side.

Extent and capacity of the Mill.

A 20-stamp mill will be erected at once, and provision made for increasing it to 60 stamps when business demands it. The stamps will weigh 950 lb., fall nine inches probably (depending upon experiment) and drop 90 times per minute. No amalgamation will be done in the battery, which will be double discharge. It is desired to get the greatest possible capacity, and the small size of the crushed ore will enhance this. At least five or six tons per stamp is expected per day. Experiments will be made with different materials for shoes and dies. Some are made of chilled iron, some of Wilson compressed steel, and others of chrome steel. The chilled iron will be used as a standard for experiment A battery of the latter will be placed alongside one of the Wilson compressed steel, and both batteries always run together on the same ore. The same plan will be carried out with the chilled iron and chrome steel. Whichever proves most satisfactory will be adopted thenceforth. The ore will be carried from the storage bins to the batteries on a rubber belt similar to the previous one mentioned, and connection will also be made with the sampler so that ore can be taken directly from the latter without going to the bins. Hanging Challenge feeders will be used.

Concentrating and Amalgamating.

The crushed product will run from the battery direct to the concentrators and then over the amalgam plates. Part of the free gold will thus be kept with the concentrates, but the tailings, freed from the latter, will give less trouble in amalgamation and a higher percentage of extraction will be obtained. The vanners will have 4-foot plain belts, and one novel feature about them will be the gyrating instead of lateral vibrating motion. This, Mr. Snider says, will largely increase their capacity and give an equally good concentration. The amalgam plates will also have this motion for the same reason. For each battery the plate will be eight feet wide and only six feet long. No mercury traps will be used, but the work of the amalgamators will be watched and checked closely.

All the milling and crushing machinery is from the Gates Iron Works of Chicago.

Driving power of the Works.

One thing that will tend to lower the rate at which ore can be milled is the cheap power at hand There is a fall of 16 feet here between the lake and river, and it is calculated that 1,200 horse power is available. There are three old turbines on the property which had been used formerly and are now being set up. They have a combined capacity of 500 horse power, although not more than 250 will be utilized even when the 60 stamps and other machinery are in operation

Mr. Snyder gave me the following table of charges, based on a three per cent. concentrate basis, which he had worked out :

	$	$	$
Assay value of ore..	10.00	20.00	30.00
Sampling	.85	1.10	1.35
Milling (including retreatment of concentrates)... ...	1.50	2.00	2.50

Assuming that 80 per cent. of the gold is saved, which is a fair assumption, this leaves on a $10 ore $4.62 for mining and transporting on barges, on a $20 ore $11.91, and on a $30 ore $19.11.

A good assaying laboratory has been built, and facilities will be had for buying bullion.

On January 14 I visited the works again and found the sampling and crushing department in working condition and the stamp mill completed. The buildings are covered with sheet iron. The sampling department is provided with scales for weighing all the ore after sampling and before going to the storage bins. The carrying belts were running, and performed their work very satisfactorily. In the mill there are four 5-stamp batteries as intended. One battery was in operation, and the rest are expected to be in a few days. The stamps fall between seven and eight inches and weigh 950 lb. One hundred drops per minute will be the rate. They are running with a capacity of four tons per stamp per 24 hours at present, and it is expected to get six tons per stamp ultimately. The ore does not go direct to the vanners from the batteries as first intended, but passes over gyrating amalgamation plates at the stamps first, then over the vanners, and the tailings to other gyrating amalgamation plates. Before the first amalgamation plates were used it was found that the vanners collected practically all the free gold with the concentrates ; hence the question was merely a commercial one of losing the interest on the gold for so many months, or until such time as the chlorination plant was erected and the concentrates treated. There are four Frue vanners and two gyrating ones. The latter are supported on upright flexible steel rods, one at each corner. In the centre underneath is an unbalanced pulley, running on a vertical axis and attached to the vanner. This is driven by a belt coming from a shaft overhead, around pulleys attached to the side of the vanner and around the unbalanced pulley in question, thus giving the whole vanner a horizontal circular or gyrating motion. The amount of this motion can be regulated by adding weights to one side of the unbalanced pulley. The mechanism is extremely simple and effective. The vanner is much lighter than the ordinary Frue, and should be cheaper also. The feeding of the belt is the simplest part of all. There is a friction clutch attachment to the roll at one corner by which the latter is turned a certain amount with every gyration. One of these machines was running, but no ore had been treated on it yet. All the vanners have 4-foot plain belts. The gyration of the amalgam plates is produced in the same way. There are eight of these plates, one in the front of each battery, and one for the treatment of the tailings of each.

Some modifications in the completed Works

There is about 350 tons of ore in the storage bins which has been crushed and sampled, and was being put through the mill at the time of my visit to the works.

Brent's Sampling Works.

Mr. Charles Brent of Rat Portage has fitted up a sampling and assaying laboratory in that town, and is prepared to deal with samples weighing up to two tons. The sampling machinery consists of a No. 0 Gates crusher, crushing rolls and a steel sampling floor. A sample grinder has been ordered also. Power is furnished by an engine and a boiler of 12 horse power each. The assaying laboratory is well provided, the furnaces burning crude oil mixed with superheated steam. At present laboratory tests by chlorination or cyanide can be made on a small scale. Mr. Brent intends to erect a small stamp mill in the spring, with concentrating machinery and chlorination and cyanide plants.

Brent's Testing Laboratory at Rat Portage.

Mines of the Upper Seine

The two mines which are making the Upper Seine river country famous are the Sawbill and the Hammond Gold Reef, both situated

on the eastern side of Sawbill lake. I visited these places three times in 1897—on July 16, October 14 and December 10.

The Sawbill Mine.

The Sawbill property consists of locations 313 and 314X. The mill sight is on 323X, adjoining the former and bordering on the lake, the surface rights of which have been leased to the company. The company which owns the mine is the Sawbill Lake Gold Mining Company, Limited.

Sawbill Lake Gold Mining Company.

The formation of the region is an altered granite, and some small bands of green schist occur in places. Several veins have been found. The main or Sawbill vein, which is on 313X, has been traced 2,000 feet with a strike of N. 25° E., and shows in the shaft a nearly uniform dip of 75° east. About 350 feet west of this is No. 2, or Sawbill Junior vein, which has been traced 1,000 feet. On the southeastern corner of 314X is a deposit which is similar to and is believed to be the continuation of the Hammond Reef, which will be mentioned later; there is about 1,000 feet of it on the location. There are several other veins on the property which I did not see, but which may prove to be important when more testing is done.

Description of the Company's Properties.

The Sawbill Junior vein has been stripped for 100 feet, and where it crosses the corner of 323X a test pit has been sunk 12 feet. On the Hammond Reef stripping has been done for a length of 150 feet, and also a little blasting in several places over the surface. Lately over 200 feet has been uncovered for the purpose of ascertaining its width, but the walls or boundaries were not reached. Several test pits have been sunk at different points along the main vein.

A shaft seven by 10 ft. inside the timber has been sunk on the main vein to the depth of 205 feet. Sixty feet from the surface a level has been driven south 195 feet, and one north 177 feet. At a distance of 186 feet south of the shaft on the same vein an air shaft has been sunk to connect with this level. At a depth of 120 feet in the main shaft a level has been driven south 117 feet and one north 135 feet. On this level a sump eight by 14 feet in size and 15 ft deep has been sunk 15 feet south of the shaft, and a fork driven into the west wall of the drift. A No. 4 Blake pump is used. All stoping is overhand. In the first level south stoping is being carried on near the shaft; the stope is 40 feet long and has an average rise of 28 feet above the floor. Stoping has been commenced in the north drift also. So far the stoped out portion is about 25 feet long with an average raise of about 10 feet above the floor. In the second level south there is a stope near the shaft 40 feet long and 25 feet from the floor at the highest point, the average raise being about 18 feet. The vein is composed of a white milky quartz containing a little pyrites and galena. Free gold is quite common all through it. It has good walls and ranges from two to eight feet in width underground the average being about four feet. I did not get down to the bottom of the shaft as there was 15 or 20 feet of water in it—operations having ceased while they were waiting for a pump—but Mr. Wiley told me that the vein had widened out to six feet there. Drilling so far is done by hand, but it is the intention to put in an air compressing plant soon.

Main shaft of the Mine.

Tramways are laid in all the levels and small trucks convey the buckets from the working faces to the shaft. A 15 horse power hoister, made by Miller Bros. & Sons, Montreal, and a 25 horse power boiler constitute the hoisting machinery. A $\frac{3}{4}$-inch steel wire rope is used. At the surface tramways are laid to the rock and to the ore dumps, and one 550 feet long runs to the mill. The loaded cars run down by gravity. Four self-dumping cars are employed altogether.

A stamp mill has been built and has been running since about the first of October, 1897. The machinery, which was made by Fraser and Chalmers, consists of a sizing screen, a Blake crusher, two 5-stamp batteries with Challenge ore feeders, a Brown's four-compartment hydraulic sizer, mercury traps and three Frue vanners. The battery room is 36 by 24 feet, the vanner room 40 by 24 feet, and the engine and boiler rooms each 34 by 23 feet in size. The stamps weigh 850 lb. and have a speed of 90 drops per minute. The shoes,

A ten-stamp Mill in Operation.

dies, cams and tappets are all forged steel. A 30-mesh sieve is now being used. Finer meshes were tried, but the gold in this ore is coarse and it is found that the tailings do not assay any higher with the 30-mesh while the capacity is increased. Two of the vanners have 6-foot plain belts, and one a 4-foot corrugated belt. Power is furnished by two 35 horse power boilers and a 70 horse power Corliss engine from the Waterous Engine Company.

Water supply for the Mill.

For water supply in summer a small creek has been dammed about 600 feet from the mill. A well 20 by 30 feet in size and 12 feet deep has been excavated behind the dam. A 3-inch pipe runs to the mill. The tank in the latter is 20 feet lower than the dam. This is expected to supply water for six months in the year, but for winter use a pipe 1,600 feet long had to be run from the lake and a pump stationed there.

Condition of the Mine.

A ladder way has been provided for ingress and egress in the main shaft, but it is not cased off from the bucket way, nor are the ladders properly arranged. But the manager intends to have a new hoisting plant installed soon, and instructions were therefore given to have the man-way secured according to the requirements of the Mines Act as soon as possible. It is expected that the air shaft will be continued to the second level, and it may be used as a man-way. The skip-way is not fenced at the surface, nor at the levels, and this must also be attended to. Trap doors to the ladder and skip-ways are provided where necessary.

The mill machinery is all properly guarded, and railings were placed at the crusher and battery floors as directed. A dressing room has been built near the shaft.

Officers and Miners.

Mr. F. S. Wiley is general manager of the mine. Mr. G. H. Brotherton was superintendent at the time of my first visit, but Mr. S. B. Schrontz, who supervised the construction of the mill, was appointed to the position later on. Mr. C. C. Schrontz, son of the former superintendent, is now in charge. There is a total force of 50, of whom 25 are miners.

Buildings in connection with the Mine.

The following buildings are on the property in connection with the mine: Shaft house, engine house, dressing room, powder house, blacksmith shop, office, assay office, stamp mill, saw mill, oil house, boarding camp, two living houses, warehouse, stables and pump house. A saw mill belonging to the mine, with a capacity of five or six thousand feet per day, is situated on the lake and cuts all the timber for lumber, building and mining purposes.

Access to the Sawbill Region.

Good wagon roads have been constructed where necessary on the property. The Sawbill country is not so easy of access as most other sections. There are two ways of reaching it from the the railway. One is the canoe route from Savanne, which takes two or three days; but most of the travelling is done by the other, which is by way of Bonheur, whence a stage runs every day in the summer and every second day in the winter. In the summer time the stage runs within a few miles of the mine to a place called Red Paint, from which point there is a water route to the mine. The distance from Bonheur to Sawbill is 33 miles and can be made in a day. There is talk of the Canadian Pacific Railway Company constructing a tram-road to facilitate travelling.

Hammond Gold Reef.

History of the Reef Mine.

Adjoining the Sawbill properties is the famous Hammond Gold Reef, which is the object of so much interest in the country both on account of its tremendous size and the peculiarity of its ore. The discovery of this reef was made by an Indian named Kabaskong, who found an outcropping on what is now 316X, and showed it to Mr. James Hammond, the present manager of the mine. Mr. Hammond and Henry Folger, who were partners, took up locations 316 to 322 X, all of which are on the reef except the last; 337 and 338X were taken up later on. In December, 1896, a half interest in 337 and 338X was sold to the Hammond Gold Reef Mining Company, and operations commenced there on January 1, 1897. But a lawsuit had been held over locations 316 to 322 X, and as a result Messrs. Hammond and Folger maintained only a two-thirds interest between them. Half of their interest in these locations was then sold to the Folger-Hammond

Camps of the Golden Star Mine in Summer of 1897, p. 73.

Camps of the Golden Star Mine in Winter of 1898, p. 73.

Shaft and Engine House of the Golden Star Mine, looking toward the hill, p. 73.

Golden Star Mine, showing 1,500-ton stock pile, p. 73.

Gold Reef Mines Company, and operations have been commenced here also. There are thus two companies working on the reef.

A formation of altered Granite.

The formation here like that of the Sawbill, is altered granite. There are three ore bodies on 337 and 338X; two quartz veins and part of the reef. An account of the latter will probably be given in Dr. Coleman's report, as he visited the place during the summer. Suffice it to say here that it consists of a mixture of altered granite, quartz and chlorite, with streaks of green schist. It has been traced three or four miles, and has a general direction of northeast and southwest. Stripping has been done in a number of places in order to obtain its width. The boundaries are rather indefinite, but as near as can be ascertained it is 462 feet wide at the widest known place, which is on 317X. On the locations we are dealing with, viz., 337 and 338X, it varies in width from one to two hundred feet. One hundred feet is its width at the narrowest place as far as known. It has not yet been proven to what extent it is gold-bearing, but so far the results have been very satisfactory. Its value can only be known however by a number of mill runs taken from different parts of it. Several of these have already been made and show an average of between $6 and $7 per ton. In places the gold runs in pay streaks which have been defined but to a very limited extent. It is probable that the greater part of the reef will have to be milled, and that a large stamp mill will be required to deal successfully with the proposition.

Mining operations on the Reef.

All mining on the reef will be open work, with the exception of the sinking of test shafts. A considerable amount of work has already been done. On 337X an open crosscut has been made 300 feet long and 20 feet deep on the average. From the crosscut on the south side a large open drift has been made in the reef 97 feet long, 40 feet wide and 38 feet deep. There is a pay streak in the west wall of this drift about 16 feet wide. The drifting has been carried 24 feet farther south here for an average width of about eight feet. On the east side of the drift the ore has been quarried out all along for a depth of from five to 10 feet below the floor, and for an average width of about eight feet. The ore which is being treated in the mill is all from this open drift. On 338X a test shaft has been sunk on the reef to the depth of 80 feet. Sixty feet from the surface a crosscut has been driven east 20 feet, and one west 17 feet. The ore at the bottom of this shaft differs considerably from that at the surface; there appears to be more chlorite and quartz in it. It assays $3 to $4 higher than at the surface also, and is the same all along the crosscuttings. Where the reef crosses locations 316 and 317X to the south a considerable amount of test-pitting and open-cutting has been done; and also farther south test pits have been sunk in several places along the reef for about two miles. Near the middle of the reef on 316X an open cut has recently been made 47 feet long, nine feet wide, and with an average depth of 12 feet. Farther southwest a large amount of ore has been taken out and left on the dump for future use. Over 200 tons were taken from these cuttings for a mill run.

Other veins on the Locations.

On the northern part of 337X there is a vein known as E vein, which runs nearly north and south and crosses over to 323X on the north. There is four or five hundred feet of it on the Hammond property. It varies in width from three to three and a half feet. The vein matter is white quartz, slightly charged with pyrites. A shaft six by eight feet inside the timber has been sunk to a depth of 50 feet. Two test pits four and 12 feet deep have been sunk also, and stripping has been done to the extent of 300 feet. Almost in line with the open crosscut on the reef on 337X, and to the west, is a quartz vein known as B vein. It runs east and west, and has been traced about 660 feet. An incline seven by nine feet in size has been sunk 127 feet on it. This vein has maintained an almost constant dip of 22° from the surface to the bottom of the incline, which is something unusual; and it shows a width of from two to three feet.

On my visit of December 10 I found that all mining had ceased for the winter, as there was sufficient ore on the dump to supply the mill until spring.

In the shafts drilling is all done by hand, but machine drills operated by steam are used in the open cut. There are four of these, but only two are in use at a time.

Tramways at the Reef Mine.

A tramway a third of a mile long connects the open drift on 337X with the mill. It runs through the crosscut and branches into the drift. A tramway also runs from B incline, and a pole road from E shaft to the crosscut, connecting with the tramway to the mill. At B incline there is a tramway extending to the bottom, and a steam hoister at the surface for raising the cars. There are five cars in use altogether. In the open cut cars are filled from a bucket which is raised by a derrick. One boiler supplies all the power for hoisting and drilling in the open drift and raising cars at the incline. At the mill the cars are hauled up an incline from the end of the main tramway to the crusher.

A 10-stamp mill has been completed and has been running since the middle of October 1897. Although it is now treating the ore from the open drift principally, it has been largely used for making mill runs from ore taken from other parts of the reef. It is really more of a test mill than anything else, being too small to deal economically with such a body of low grade ore ; and it is likely to be supplanted by a much larger one if future tests on the reef warrant it. The machinery consists of a Blake crusher, two 5-stamp batteries with Challenge ore feeders, two mercury traps and two Frue vanners, all from the William Hamilt n Machine Company of Peterboro'. The stamps weigh 850 lb. and drop 81 times per minute. The shoes and dies are of chilled steel. The vanners have 4-foot plain belts. Power for the stamps and vanners is supplied by a 20 horse power upright tubular boiler, and an engine of the same capacity which makes 300 revolutions per minute. A separate boiler and engine of 15 horse power each are provided for the crusher.

A ten-stamp Mill in running order.

About a mile and a quarter from the reef on the other side of Sawbill lake is a waterfall which when developed will be used for power purposes. Electricity will be the transmitting agent. It is estimated that 500 horse power can be obtained.

A circular saw has been set up outside the mill and operated by the crusher engine for cutting firewood.

The water supply in summer is got by damming a small creek which runs past the mill. But this is not sufficient in the winter time as it runs nearly dry, and a pipe has been run to the lake 1,300 feet distant, and a pump stationed there for use in the latter season.

In the summer a force of 77 men, including 30 miners, was employed altogether, but in the winter this has been reduced to 30, including woodcutters.

The buildings consist of sleeping camp, dining camp, office, assay office, workman's cottage, two dwelling houses, store house, ice house, boiler house, blacksmith shop, stable and mill building.

The outside works are in a suitable condition except the shaft and test pits on E vein, which should be fenced In the mill the engine and drive belt should be provided with guard railing. Mr. Hammond has informed me that these instructions have been carried out. The boiler in the pumping station was not provided with a water gauge, and the attention of the manager was directed to the clause in the Mines Act with reference to this as well as to the other necessities referred to.

Condition of the Mine and Mill.

It may be mentioned here that the ground is being surveyed and cleared preparatory to the erection of a 50-stamp mill on location 321X, which belongs to the Folger-Hammond Gold Reef Mines Co. It will be on the shore of a small lake which is contiguous to the reef.

Hawk Bay Mine.

Hawk Bay Mine.

Less than half a day's journey up the river from the Sawbill is the Hawk Bay mine, which is on a small bay off the Seine river. A large amount of development work has been done on this property, but unfortunately the company has been disappointed in its expectations and on September 28 ceased work altogether. Nevertheless there is a good quartz vein running northeast and southwest which has been traced about two miles, in a formation of altered granite similar to that of the Sawbill

and Hammond Reef. The vein is similar in appearance to the Sawbill also, but not so wide. There are two veins on the property ; the other being close by to the west, but not traceable so far. Four shafts have been sunk on the main vein ; two about 200 yards apart on the Hawk Bay property, and two on the location to the north through which the vein runs No. 2 shaft, which is six by eight feet inside the timber, has been sunk to a depth of 122 feet and five feet of drifting done at the bottom. The vein averaged about two feet in width. Mr Wiley of the Sawbill, who is one of the chief promotors of the company, told me that the vein kept the same at the bottom but depreciated in value, hence the reason for the discontinuance of work. No. 1 shaft is about 75 feet deep. Both shafts are securely covered with heavy trap doors and provided with shaft houses. On the adjoining location to the north a shaft has been sunk 60 or 70 feet, and south of this two or three hundred yards another one 12 feet, in which the vein showed well.

A Rand air-compressing plant had been installed, but will be removed shortly. Machine drills were used. There are three hoisters ; a compressed air one at No. 2 shaft, one operated by steam at No. 1, and a horse power hoist which had not been used.

The buildings consist of cooking camp, two sleeping camps, store house, stables, office, dressing room, powder house, engine house, blacksmith shop and two shaft houses.

Island Falls Locations.

Island Falls Properties.

Mr. James Hammond, manager of the Hammond Gold Reef, wrote me upon request on December 24 with regard to a property near Island Falls consisting of location AL282., which had been worked all summer, and which is proving to be of considerable importance. The formation here is altered granite, similar to the Sawbill. So far only one vein has been discovered. This crosses the location at a strike of N. 57° E. approximately, and dips 65° southwest. There was not on the whole length of the vein any outcrop coming to the surface, but it has been exposed at a number of places by pits and shafts, and Mr. Hammond informs me that he has since traced it across six locations to the northeast and is sinking test pits on the same. Eight test pits and a shaft have been sunk, or are in the course of sinking, on the location. Mr. Hammond informs me that he has just returned from there and that the shaft is 95 feet deep. The property was applied for in June, 1897, and work has been going on continuously from that month, but it appears that there is a rival claim and the dispute has not been settled yet.

Mr. Hammond also writes me concerning another property in which he is interested, viz., locations AL298 and 299, near Island Falls, which is owned and worked by the Roy Mining Company. Work commenced in the latter end of December. Two pits and a shaft are being sunk and good camps have been built.

Work is going on at several other places in this part of the country, which will be referred to in Dr. Coleman's report.

Clearwater Locations.

Clearwater Mining Company.

While on my way down the Seine river about ten or twelve miles from Sawbill on October 15th I met a party on a portage coming up. Mr. J. A. Steele, manager of the Clearwater Gold Mining Company's property, northeast of Eye lake and south of Clearwater lake, was one of the party, and I got the following notes from him : They are a Michigan company with the head office at the mine. The property consists of locations WR56 and BJ13, 14, 15 and 16. There is a force of twelve men, eight of whom are miners. A number of veins have been discovered on the locations, but only two are being worked. One vein is a contact between the granite and the schist. A seven by nine foot shaft is down 11 feet and a tunnel is in seven feet.

We stopped that night at a log hut a few miles further down the river which was occupied by a lone Swede, who was left there, he said, by a party of miners who were to commence sinking a shaft in the vicinity right away.

I walked in to Lake Harold mine the next day, but found no signs of life.

Mines of the Lower Seine

The Lower Seine River or Shoal Lake country is one of our most important mining regions. This year a large amount of development work has been done there, and there are now several important mines in that section. The largest of these is the Foley, which has been described in previous reports.

The Foley Mine.

I visited the Foley Mine on July 12, October 25 and December 23. On my first visit Mr. Joseph C. Foley was manager and Mr. R. H. Flaherty engineer, but in the latter part of July Mr. W. M. Strong, M.E., was appointed to fulfil both of these positions, and Mr. Foley was made inspector of the mine.

As is well known, the formation here is protogine, and it contains a great many quartz veins. Thirty-two have been discovered on the three locations so far, besides a number of small stringers. More or less stripping has been done on all the veins. The Daisy, on AL 75, has been stripped 170 feet. The Lucky Joe on the same location has been stripped 180 feet and traced 625 feet. The West vein on AL74 and 75 has been traced 2,865 feet. Eleven shafts have been sunk on the different veins. Two are on AL76, one 12 feet deep and the other 17 feet. On AL75 there are the Lucky Joe, 71 feet; No. 5, 113½ feet; No. 1, 13 feet; No. 3, 15 feet; North shaft, 309 feet; West shaft, 8 feet; No. 9, 31 feet; Daisy, 16 feet; and one other 12 feet. Recently a small test pit has been sunk on the Lucky Joe vein 8 feet, and about midway between the Lucky Joe and No. 5 shafts an open cut 30 feet long and 14 feet deep has been made on a newly discovered vein. The Lucky Joe shaft, which is 5½ by nine feet in size, has been sunk 71 feet, and is discontinued for the present. Thirty feet from the surface a level has been driven north 37 feet and one south 36 feet. No. 5 shaft is eight by nine feet in size and has been sunk 113½ feet and discontinued for the present also. At a depth of 50 feet from the surface a level has been driven south 80 feet, and one north 60 feet. At a depth of 100 feet a level has been driven north 7 feet.

Extent of development work.

All work is now being confined to the North shaft, on the Bonanza vein; although arrangements have been made in the air compressing plant for the continuation of work in the two former shafts later on. The North shaft is 10 by seven feet, and has been sunk 309 feet. At the depth of 100 feet a level has been driven south 61 feet, and one north 37 feet. At a depth of 150 feet a level has been driven south 165 feet, and one north 113 feet. At a depth of 200 feet a level has been driven south 89 feet, and one north 150 feet. At a depth of 300 feet a level has been driven north 101 feet, and one south 28 feet. In the second level south, at a distance of 147 feet from the shaft, a crosscut has been driven west 104 feet, cutting the Jumbo vein at the end. A winze connects the first and second levels 50 feet south of the shaft. In the first level south, at a distance of 12 feet from the shaft, a 35-foot raise has been made and connected with the shaft at the top by a small drift about one foot square, for ventilation purposes. There are two winzes between the second and third levels; one 77 feet south from the shaft and one 50 feet south. Ten feet from the shaft in the third level south an inclined winze has been sunk and connects with the shaft 28 feet below the level. At a distance of 77 feet north from the shaft in the third level a winze is being sunk to connect with the fourth level and is 73 feet deep. In the fourth level a raise is being made to meet this winze, and there is about five feet of rock yet to go through. In No. 1 level north there is 25 feet of overhand stoping with a raise of eight feet. In No. 3 level north all the ore from the winze for a distance of 46 feet north has been stoped out up to the second level and for a height of 70 or 80 feet above it. In No. 3 level south overhand stoping has been carried in as far as the winze connecting with the second level, with an average raise of three feet above the roof of the level. Fifteen feet from the shaft in the north drift at the fourth level an inclined raise is being made which slopes to the north. The highest point is

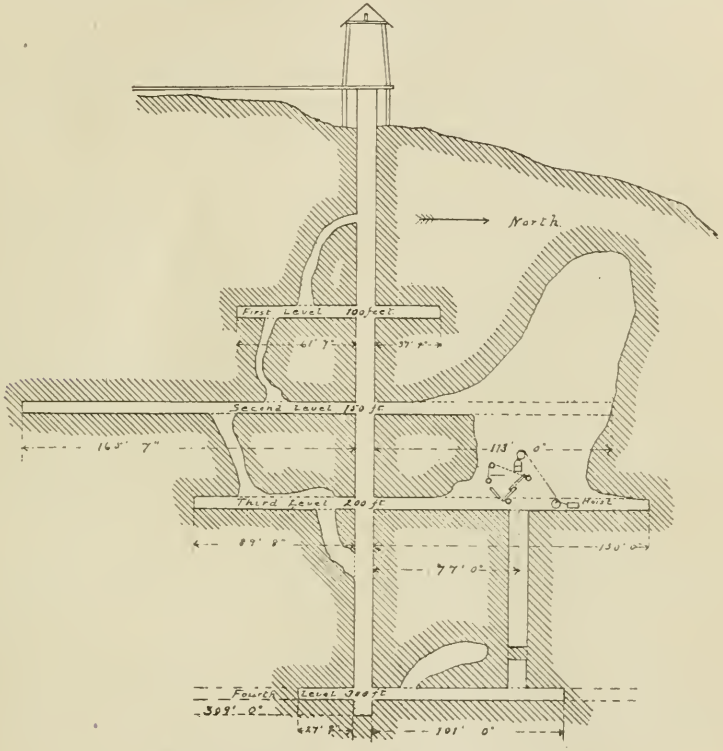
The North or Main shaft.

25 feet above the roof of the level. Stoping is being done in it. Sinking and drifting are done by contract, and stoping by the day's work.

With the exception of a slight extension of the north drift in the 200-foot level no work has been done in or about this level since July, 1897, nor will there be in future. Below this the vein is much wider and mining work can be carried on more profitably.

quartz. At the bottom of the shaft it is four feet between walls, but more than half is country rock. It averages over four feet in the shaft from the 200-foot level down. Free gold is not very common in the main shaft, although plenty of good specimens are got from the Lucky Joe. The concentrates average about one per cent.

All drilling and hoisting at the three shafts will henceforth be done by compressed



Foley Mine. Longitudinal section of North shaft on Bonanza vein.

On July 12 Mr. Foley gave me these measurements of the widths of the vein in the first three levels. First level south, 13 to 19 inches; north, 16 inches on the average. Second level south, 16 to 18½ inches; north, 24 to 36 inches. Third level south, 13 to 18 inches; in the stope at north drift, 60 to 96 inches, but only 12 inches at the end of the drift. The vein improves considerably below the 200-foot level. In the winze to the north it is seven feet wide at the top, five feet at a depth of 32 feet, and averages six feet, all

July measurements of the Main Shaft.

air. An air-compressor has been installed in the mill and transmits the compressed air to the shafts. The north shaft is nearly a mile from Shoal lake, where the stamp mill is situated. The Lucky Joe and No. 5 shafts are close together, and over half a mile from the lake on a line between the main shaft and the mill. The ground has a general rise from the lake to the shafts. The compressor is a Rand duplex, class B. It has a capacity of 12 No. 1 drills, but at present eight only will be operated, all in the the North shaft; four are in use now.

Machinery of the Mine.

Three receivers have been placed, one at the compressor 16½ feet long by 4½ diameter, one at the Lucky Joe and No. 5 shafts 16 feet long and four diameter, and one at the north shaft of the same dimensions. An air pressure of 90 lb. will be used. A six-inch feed pipe has been laid to the receiver at No. 5 and Lucky Joe shafts, and a five-inch from there to the North shaft, making 4,380 feet altogether. The pipe down the North shaft is three-inch diameter. The plant is all from the Jenckes Machine Company of Sherbrooke, Que. Hoisting in the North shaft is done by skip and in the other two by bucket. The skip-road has been completed to the 300-foot level. A 3,000 lb. skip is used. Tramways have been laid in the levels, and cars convey the ore from the working faces. A 40 horse power hoister operates the skip. The drum was originally 42 inches diameter, but this was too large and strained the engine too much in starting the loaded skip, so a 30-inch drum was substituted and was found to give good satisfaction. The engine has to be run faster, but is quite capable of so doing. A new cable has also been put in. It is 800 feet long and ¾-inch diameter, made of plough steel, 16 strand and a hemp centre. It has been tested to a breaking strain of 18 tons. The old cable was ⅞-inch diameter. A 40-inch sheave is used. The skip is raised 40 feet above ground and automatically dumped into a large pocket with a capacity of 50 tons.

Tramming from the Shaft to the Mill.

A tramway 4,380 feet long is built from the pocket to the mill. Three cars, with a capacity of four tons each, are filled from underneath the pocket and convey the ore to the mill by gravity. They are drawn back by horses. Down in the North shaft are two hoisters also driven by compressed air ; one will be used for sinking below the 300-foot level until a sufficient depth has been reached to put in a skip-way. The other was used for sinking the winze in the north drift at the third level. The ore was raised into a pocket which had been constructed in the stope above, and the cars in the level were filled from the pocket. There is an engine house at No. 5 shaft, with two hoisters, an air compressor, two boilers and a tank. The hoisters, which are 25 horse-power, will probably be used at this and Lucky Joe shafts when work commences in them.

The mill, which was built last winter, has been running more or less all summer. The machinery, which is from Fraser and Chalmers works, consists of four 5-stamp batteries with Tulloch feeders, four Frue vanners, a Comet B crusher and an elevator for raising the ore from underneath the crusher to the bin above the stamps. This bin has a capacity of 250 tons. The stamps weigh 850 lb., and drop 86 times per minute. The height of drop is six inches. The vanners have six-foot plain belts. The concentrates are being saved with the expectation of treating them with the cyanide process at some future date, or else shipping. Power for the air compressor and the mill is furnished by three 60 horse power boilers. A 60 horse power Corliss engine operates the mill.

The Stamp Mill.

For the past few months the work has been confined to development altogether, and the running of the mill has been intermittent. An average of 250 tons per month, the product of development work, has been milled just to get it out of the way. The mill was shut down on December 20 as it was found that ore could not be hoisted conveniently until the shaft has been sunk below the pentice at the fourth level. It is the intention to start up on January 1 however, and run the mill continuously from that time on.

There is a dock at the lake, and a pump upon it for supplying the mill. There is also a derrick on the dock for raising heavy pieces of machinery from the boats to the car which runs to the mill.

The shaft is timbered for a depth of about 20 feet, the walls below being quite solid. The ladder-way was in a bad condition at the time of my first visit, but has since been attended to and is now quite safe for ascent and descent. The ladders are placed at suitable angles, and platforms have been placed at suitable distances apart. It is all cased off except that portion between the third and fourth levels where one or two boards have been left off the casing so that injury may not result to it from blasting in the shaft. This will be closed up when the shaft has been sunk a

Condition of the Mine and Mill.

little deeper. The skip-way is properly fenced at the different levels. The fencing at the surface of the shaft has not been carried all around, and instructions have been left to have this done. It would also be advisable to fence or securely cover the winze in the third level, since hoisting has been discontinued there.

A large amount of fresh air is forced into the mine by the compressor, and the ventilation is good. The water is raised by the skip.

Lucky Joe and No. 5 shafts are securely covered at the surface.

The machinery in the mill has all been provided with guard rails where required, except the new compressor, for which a railing is being made.

A dressing room has been constructed at the North shaft as required.

The total force amounts to 48 men altogether at the present time. After January 1 it was intended to have 20 miners, including both shifts in the North shaft.

Buildings on the Property.

The following buildings are on the property in connection with the mine: Three engine houses, three shaft houses, warehouse, blacksmith shop, assay office, two dressing rooms, three boarding houses, four extra sleeping camps, office, two barns, mill and compressor buildings, powder house and several private houses. A powder thaw house has recently been built. There is also a hospital with a doctor and a nurse in attendance, and a general store, but the latter is a private venture. Two new dwelling houses have been built lately, one for the manager and one for the inspector and president of the company.

Good wagon roads have been constructed where required on the property.

A large amount of clearing has been done, and AL76, which borders on the lake and contains 108 acres (50 cleared), has been surveyed for a town site.

A small 7 horse power steamer called the "Wanda" belonging to the mine runs on the waters of the lake and river.

Olive Mine.

Another mine in this section which is attracting considerable attention by its unusual richness is the Olive, situated on the southern shore of the western end of Little Turtle lake. The property consists of locations G60 and 61, belonging to the Preston Gold Mining Company, Limited. W. A. Preston is manager of the mine. It is reached from Mine Centre by a good sleigh road in the winter time by way of Bad Vermilion lake; in the summer the route is the same, but the lake must be crossed by canoe. The total distance is nine miles, of which three is on water. I visited the place on July 10, October 20 and December 22.

Preston Gold Mining Company.

Phillip LePage and W. Preston, the latter a nephew of the manager, had been prospecting the location since August, 1896. I got the following notes on the prospecting work which has been done from Mr. LePage: Two veins have been found; one, the main vein, can be traced about four miles altogether, crossing both locations. It has a strike of about 7° north of east. No. 2 vein is parallel to and about 25 feet north of the main vein. It has also been traced across both locations The country rock is diorite, but there is a formation of green schist which encloses the veins and runs along in the same direction. The main vein has been stripped most of the way on G60, and considerable stripping has been done on No. 2. Test pits have been made on the veins in a number of places from three to 10 feet in depth, mostly on the eastern side of the property. On the water front of G60 there is an outcropping showing large quantities of iron oxide. A test pit has been sunk and some quartz taken out, but very little work has been done on it. Assays so far have been low.

Prospecting the Property.

Three shafts have been sunk on the main vein to depths of 118, 65 and 62 feet. The main shaft, which is five by nine feet inside the timbers, is 118 feet and is being continued. Sixty feet from the surface a level has been driven east 81 feet, and one west 38 feet. The drifts are also being continued. It is the intention to sink 150 or 180 feet and then crosscut north and south. Sixty feet east of the main shaft is No. 3, or the air shaft, which is on the average five by five feet in size and 62 feet deep. It was commenced a few feet

Shafts sunk on the Locations.

north of the vein and sunk vertically until it reached it, about 20 feet down. From this point it was continued on the vein to the present depth, where it is connected with the drift from the main shaft. Overhand stoping has been commenced near the air shaft in the drift.

About 250 feet east of the main shaft a six by nine shaft has been sunk on the vein to a depth of 65 feet. It is discontinued for the present, but a platform was lately built about 20 feet from the surface for the purpose of examining the vein at that point, and it is likely that operations will be continued here in a short time.

All work at the mine is done by contract. The next 50 feet in the main shaft has been let at $18 per foot. Hoisting, blacksmithing and the lander are supplied free, which amounts to about $5 more per foot. The shaft is six by 10 feet full size. Drifting is costing $12 a foot, not including the hoisting and blacksmithing, which amounts to $3 more. The drifts are four by six feet in size.

Peculiar nature of the Vein.

The vein is rather peculiar in its nature. There is a narrow but persistent vein of quartz which is very rich, and about a foot of country rock of a schistose nature on either side, which carries sufficient gold for milling purposes. The quartz is five or six inches wide in the bottom of the shaft, and from six to 18 inches in the drifts. Several small quartz stringers are coming in at the bottom all across the shaft. In No. 3 shaft the quartz is three feet at the widest point, and about six inches at the narrowest, averaging about two feet. In the test pits it shows from a few inches to three or four feet in width.

In the main shaft the assays run from $40 to $250, and the average is about $110. This is the pure quartz. The schistose matter next to the vein runs from $7 to $20; and where quartz other than the regular vein occurs in the shaft it assays from $5 to $10.

Machinery, Mill and Buildings.

Drilling is all done by hand, but it is the intention to have an air compressor and machine drills in before long. In the main shaft a steam hoister and bucket are used. A tramway about 250 yards long runs from the shaft to the mill. There are two cars in use which run to the mill by gravity. A pulley is being fastened to the hoister which will operate by belt a drum for drawing the empty cars up the tramway to the shaft.

The ore is treated in a small mill made by Fraser and Chalmers. The machinery consists of a 2-stamp gravity battery, with a Challenge ore feeder, a No. 2 Blake crusher, a mercury trap and a Frue vanner with 6-foot plain belt. The stamps weigh 1,000 lb. each, and drop 7½ or eight inches with a speed of from 105 to 108 per minute. The battery is four-discharge. Power is furnished by a 20 horse power boiler and a 15 horse power engine. The water is pumped from the lake, which is only a few yards away.

The buildings consist of a sleeping camp, office, cook camp, three extra sleeping camps, store house, blacksmith shop, mill, engine house, shaft house and a private dwelling. A new dining room, kitchen and a private dwelling house have lately been put up. The buildings are mostly frame.

A saw mill with a capacity of 1,000 feet per hour is situated near the mill and run by the engine of the latter. There is plenty of good timber on the property for mining, building and fuel. It consists of spruce, poplar and Norway pine.

There is a total force of 34 men, including 14 miners, and four Indians employed to chop wood, etc.

Condition of the Mine.

The main shaft is timbered for a depth of 15 feet. A suitable ladder-way has been constructed to the first level according to the Mines Act. But the shaft at the surface must be provided with a proper fencing, and also the bucket way at the first level. Where stoping has been commenced the stulls for supporting the miners are not sufficiently strong for the purpose, and the attention of the manager was directed to this fact.

Proper ventilation is easily secured in the cold weather, but in the summer time it was not good. A ventilating apparatus consisting of a wooden boxing extending down the shaft, and through which air was forced down by a bellows, proved a failure. For this reason they were compelled to work one shift only in summer, and blast in the evening; the air was then pure on the following morning. But

the air-compressing plant, when installed, will remedy this difficulty. No. 2 shaft must be fenced while work is discontinued in it.

An Inspector's Book was left, and notices posted up.

A fatal accident occurred at this mine in No. 1 shaft on August 20, 1897, and under instructions from Mr. Blue I investigated the same and sent in a report.

Golden Star Mine.

One of the new properties which promises to make an important mine in the future is the Golden Star, or better known as the Randolph mine, which is situated about four and a half miles north of Mine Centre, on the Government road. It consists of locations AL114 and 116 and is owned by the Golden Star Mining and Exploration Company. Mr. W. J. Merritt is manager of the mine and Mr. C. J. Stone is engineer.

Golden Star or Randolph Mine.

The discoveries on the property were made by Neil Berger and Edward Randolph in August, 1894, and it was purchased by the present company in March, 1897. But previous to this it had all been prospected. Work commenced on March 22 of the latter year. I visited the place on October 22 and December 23.

The country rock is green schist, diorite and very fine-grained green stone. The ore bodies consist of a large felsite dike and a number of small quartz veins a few inches wide which occur at different places on the property. A little blasting and test pitting has been done on some of the latter. They are very rich, but are only considered of secondary importance on account of their size.

The main ore body is the dike, which is called the Hunky vein. It has rather undefined boundaries, but is probably about 20 feet wide and has been traced a few hundred yards. The ore is the quartz, which occurs as a vein in this dike. The quartz has been traced three or four hundred feet on the surface. The strike is northwest and the dip as obtained in the shaft is vertical for 54 feet and then 70° to the southwest for the remainder of the distance.

On AL114 a shaft is being sunk on the main vein, and three test pits from three to six feet have been made to the southeast of the shaft. The latter has reached a depth of 135 feet. It is 4½ by eight feet inside the timber for a depth of 40 feet, and five by eight feet for the remainder of the distance. The first level is 74 feet from the surface. A drift runs north 107½ feet along the vein and one south 80 feet One hundred feet from the shaft in the north drift a winze is being sunk, which was 40 feet deep on December 23. There is a sump with a capacity of 150 cubic feet close to the shaft in the north drift.

Workings on the main Vein.

Like all felsite dikes, the walls are distinct in the shaft. The quartz is five feet wide at the surface, two feet of which is a rich pay streak. It widened out to six feet or the full distance between the walls, at a depth of 27 feet, and was all rich. At a depth of 32 feet the quartz pinched out entirely with the exception of some small stringers in the felsite. Fifty-four feet from the surface the quartz came in again and is quite persistent from this on. It gradually widened to three feet and has maintained this width to the bottom of the shaft. In the south drift it varies from three to seven feet of solid quartz. A couple of "horses" come in along the drift. At the end of the north drift there is 20 inches of quartz. At the bottom of the winze there is 18 inches.

The shaft seems to have been sunk in a very much oxidized and soft part of the vein, while on both sides of it the vein is quite solid. Copper and iron pyrites, galena and free gold are plentiful. The assaying is all done in Duluth, and not many reports reach the mine; but Mr. Stone, the engineer, thinks that the average is about $30 per ton. A mill test of 500 lb. taken from across the dump and sent to New York yielded $49 to the ton and was 80 per cent. free milling.

All drilling is done by hand. A small steam hoister, with a 30 horse power upright boiler, a half-ton iron bucket and wire cable constitute the hoisting machinery. Tramways are laid in the levels and the bucket carried on trucks. A No. 7 Cameron drainage pump is used.

The buildings consist of a boarding camp, office, engine room, shaft house, blacksmith shop, store room, barn and root house. There is a total force of 28 men, including 13 miners

The shaft is well timbered to the first level, and a man-way with ladders and platforms properly arranged has been cased off to this point. Trap doors are provided for the bucket way at the first level and at the surface; but a fencing must be provided at the latter place as required by the Mines Act.

Condition of the Mine.

After blasting the smoke and gas are cleared out by means of air which is forced down by a "Buffalo" blower through a 7-inch canvas pipe, which leads to the bottom of the shaft and can be connected to branches in the drifts.

An Inspector's Book was left and notices posted up.

The work in the mine is done by contract. The cost of sinking the shaft to the first level, including timbering, etc., was $20 to $23 per foot. But it must be remembered that, as stated before, it is sunk in a soft part of the vein. The contract to sink 100 feet from the first level was let at $16 per foot, not including timbering or hoisting of course. The north drift had been contracted for at $6 per foot, and the south at $8. The other levels will be 100 feet apart, so that the mine can be worked by 100-foot stopes.

If the vein continues to show as satisfactorily as it has done up to the present a Fraser and Chalmers mill will be brought in shortly. The mill site will be on Bad Vermilion lake, which is about half a mile from the shaft, and from which a tramway may be constructed to carry the ore by gravity.

AD2 Mine.

Near the Golden Star Mine and about four miles from Mine Centre are three locations, AD 2, 3 and 4, which are the property of the AD 2 Gold Mining Company, with head office at Mine Centre. The discoveries were made by Mr. William Fawcett in April, 1894 At this time the country was all green and overgrown with timber, which made prospecting difficult work. A fire swept over it in that year, cleaning off the rock, but also destroying most of the timber. A little work was done in the spring of 1894. and some test pitting in the months of April, May and June, 1895. Nothing more was done until May, 1897, when the present developments commenced and have been continued all summer. I visited the place on October 23 and on December 23.

The AD2 Mine.

The formation here is protogine and fine grained greenstone. There are five principal veins on the property; the Contact, Moose, Gem, Lucky Coon and Bartley, which are similar in nature to and are really in several cases extensions of the Lucky Coon and Ferguson veins, which properties adjoin on the south and east. The Lucky Coon vein is so called because it is a continuation of one of the principal veins on the Lucky Coon property. It has been traced about 3,000 feet altogether and crosses AD4. The strike is N. 50° E. A little blasting has been done at one point and it shows a width there of about 20 feet, but only three or four feet of this is quartz, the rest being protogine. The Bartley vein crosses the southwestern corner of AD4 and runs nearly northwest. The Moose vein is traceable the farthest of any; it has been followed across AD2 and several miles beyond, outcropping, it is claimed, on the other side of Bad Vermilion lake. The strike is the same as the Lucky Coon. The gem vein runs from AL117 to the east across AD2 and is traceable for a distance of about three-quarters of a mile. The strike is 7° south of east. It is supposed that this and the Moose veins join at the western boundary of AD2. The Contact vein has been traced across the north end of AD2 and south of AD3, for a distance of a mile altogether, including half a mile on the Ferguson property. It is on the contact between the protogine and the greenstone for a few hundred feet, and then runs into the former. A test pit has been sunk on it to a depth of nine feet. The vein is from 12 to 16 inches wide in the pit, but farther east the width averages two or three feet.

Veins on the Property.

Two test pits have been sunk on the Moose vein about six feet deep. A tunnel has been driven east on the vein for a distance of 116 feet. Sixty feet from the entrance a crosscut has been driven north six feet, and one south 20 feet. About 145 feet east of the mouth of the tunnel a shaft is being sunk on the vein with the purpose

Development work.

of connecting with the tunnel. It is now 10 feet deep and will be continued below the tunnel when the latter is reached. The vein averages seven or eight feet in width in the tunnel and test pits. It consists of quartz and country rock.

On the Gem vein a tunnel has been driven east 135 feet. Sixty feet from the mouth a shaft has been sunk from the surface to a depth of 74 feet, and is 49 feet below the tunnel. The intention is to sink the shaft 75 feet below the tunnel and drift along the vein. The same will also be done in the case of the Moose tunnel. The vein averages 2½ feet in width in the tunnel and has been gradually widening in the shaft until at the bottom it is four or five feet and only one wall reached. The vein matter at the bottom is mostly country rock, but it all carries gold. A few hundred feet east of the tunnel a shaft had been sunk 40 feet, but it is now partially filled with water. The vein is well defined as far as can be seen, and ranges from 2½ to three feet in width.

Drilling is all done by hand, and hoisting by windlass and bucket. A No. 5 Cameron drainage pump is used in the Gem shaft.

A Dean's steam 2-stamp mill made by Prescott of Duluth, Minn., is on the property and was run for a while, but did not give satisfacton and will be replaced by a gravity mill in the spring, or as soon as developments warrant it. Power was furnished by a 25-horse power boiler, but this is used for the pump now.

There is a force of 20 men, including 12 miners. Work is carried on by day shift only. John Campbell is manager of the mine. The buildings consist of a sleeping camp, cooking camp, office, blacksmith shop, boiler house and dressing room.

Instructions were left to have the shafts on the Gem vein fenced. An Inspector's book was left and notices posted up.

Lucky Coon and Ferguson Mines.

The Lucky Coon and Ferguson preperties were both lying idle last summer, but it is expected that operations are to commence on the latter before spring. Careful reports have been made upon it under instruction of the London owners.

Other Seine River Properties.

Wiegand's Locations.

On October 24 I went with Mr. John Green of Port Arthur to examine a property near the Foley mine, known as Wiegand's locations. It consists of locations AL101 to 107 inclusive. AL-107 is well wooded and the rock is therefore not exposed, but the other locations are more favorable for exploration. The ground is covered with only scattered and fallen timber, earth, moss and more or less muskeg, and with the exception of where the latter occurs the rock is mostly bared. The formation is protogine. A road leads up from the lake over AL107 to a small shack. Trails have been cut to and along the different veins, which are about half a dozen in number. These have been stripped sufficiently to show their continuity. Their general direction is northwest and southeast, but they are only roughly parallel. They vary in width from a few inches to five or six feet, and much more in places. One or two have been traced for over half a mile, while the others are exposed generally only on the high ground and disappear in the muskegs. Usually good walls are shown, but in some places they are much broken up and indefinite. The vein matter is quartz, more or less charged with copper and iron pyrites and galena. Five or six test pits have been sunk at different places to a depth of from six to eight feet.

Properties upon the Seine river.

The Alice A. property, up the Seine river a few miles from Mine Centre, will be mentioned in Dr. Coleman's report. I only visited the place once and in company with Dr. Coleman. But I understand that the owners have been working on it all summer with very satisfactory results. I am told also that at two or three other places near Sturgeon Falls on the Seine mining operations have commenced, and that on one property a five stamp mill has been ordered and will be set up soon.

Manitou-Wabigoon Region

In the latter part of October I passed through the Manitou country on my way to Wabigoon. A great deal of prospecting has been done in this region during the past year,

and the greater part of the country has been surveyed. A certain amount of development work has been done on a number of locations, but no large mines yet exist. Unfortunately two of the most extensively developed mines, viz., the Jubilee, consisting of location HP301 and the Upper Neepawa, location McA28, have ceased operations, for the present at least.

In the Manitou Country.

Jubilee Mine.

The Jubilee mine is situated at the head of Trafalgar bay in the Upper Manitou lake. The formation is green schist. Three veins have been found ; two of which are small, but the other, the main vein, has been traced across the location and quite a distance farther. It has a strike of nearly north and south. A six by 10 foot shaft has been sunk to a depth of 75 feet on the vein. The first level is 48 feet from the surface. A drift has been run north 45 feet and one south 43 feet on the vein. The latter is four feet wide at the shaft at this level, 4½ feet at the end of the north drift, and two feet at the end of the south drift. It could not be seen at the bottom, as the shaft was partially full of water. First class timber work has been carried to a depth of 25 feet, and a good roomy manway four by six feet in size and suitably cased off from the hoisting compartment is constructed to the first level, with ladders and platforms as required by the Mines Act. The machinery for an air compressing plant and a hoist is on the premises, but has never yet been put into running shape. The compressor is a single cylinder one with a capacity of four drills. The compressor, receiver and hoister have been brought to the mine, but the boiler was left on the portage two or three miles back. The buildings consist of a boarding camp and a shaft house.

The Jubilee Mine.

Neepawa Mines.

I got the following notes on the Upper and the Lower Neepawa mines from Mr. F. W. Guernsey, who is manager for both properties. The Upper Neepawa is situated north of Trafalgar bay, about three-quarters of a mile from the Jubilee. The formation is similar to that of the latter, consisting of chlorite schist. The ore body is a band of sericite schist and quartz, slightly pyritiferous, running northeast. Two shafts have been sunk, the main shaft to a depth of 70 feet and an air shaft 25 feet. At a depth of 45 feet in the former a crosscut has been driven 35 feet east, and from the end of this a drift to the air shaft 70 feet distant. There is also at the same level in the main shaft 14 feet of drifting northeast along the vein and 18 feet southwest. The vein shows a width of 30 feet in the crosscut. Some of the finest specimens of visible gold in the country came from this shaft at the surface, and at the bottom occasional samples are found. The following are the buildings on the location : Boarding camp, (to accommodate 40 men), cooking camp, office and assay office, store house, blacksmith shop and powder house. Work commenced here in November, 1896, and ceased on about the first of September.

The Upper Neepawa Mine.

The Lower Neepawa is on the northwest shore of the Lower Manitou lake, and consists of location HW54, which contains 40 acres. The formation is similar to that of the previous properties. There are seven veins altogether, but only one is being worked. This can be traced for miles and has a strike of N. 50° E. The dip is 75° or 80° southwest. A little stripping has been done and a few shots put in here and there along the vein, but very little is known of its size from surface indications. A seven by nine shaft has been sunk on the hanging wall to a depth of 65 feet. A crosscut has been commenced at the bottom. There is 11½ feet of quartz at the bottom of the shaft and only the foot wall reached. Sixteen feet of vein matter has been exposed at the bottom altogether. At this depth a pay streak in the vein assays from $5 to $140 per ton. The intention is to sink to a depth of 100 feet and then drift. This mine has been closed since September last, but Mr. Guernsey intends to commence operations again immediately. The first work on the property dates from March, 1897. Sleeping and cooking camps are provided.

The Lower Neepawa Mine.

On the north end of Manitou island, which is near the Lower Neepawa, is a property

known as the Bee-hive mine, where I am told a number of men are employed in testing and developing a vein, but I did not visit the place and can give no particulars.

The Bee-hive Mine.

Quackenbush Location.

On HP375 west of Mud lake the Quirk Bros. have taken a contract to sink a 100-foot shaft on one of the veins. The property is owned by Mr. V. Quackenbush of Dakota, and his brother-in-law. The formation is green schist. There are two veins in the location; one running north and south, and another, on which the sinking is to be done, N. 20° E. The width of the latter varies from a few inches to several feet, and it is traceable for a few hundred feet on this location and is believed to be a continuation of an important vein on an adjoining property. A five by seven shaft will be sunk and was to have been commenced on November 2. The first 50 feet was contracted for at $25 per foot; and the next 50 feet at between $28 and $30, including the furnishing of everything, such timbering, hoisting, blacksmithing, etc.

Quackenbush's Property.

Northern Queen.

About two miles north of Wabigoon is the Northern Queen mine, which was worked last winter, but has been closed down all summer. The vein is traceable for several hundred yards, and it is said for miles. Shots have been put in at several points A seven by nine shaft has been sunk to a depth of 40 or 50 feet. The vein where the shaft is sunk shows a very large per cent., much more than half, of iron pyrites, and hence would be expected to be too refractory for the extraction of the gold by the free milling process; but this peculiarity might be confined to only a small portion of the vein.

The Northern Queen Mine.

Locations near Dryden.

Early in July Dr. Coleman and I visited some properties at Dryden. We found testing and developing going on in a number of places. A report of these will likely be made by Dr. Coleman. On November 18 I visited Dryden again and learned that, although operations had been continued until late in the season in several cases and some satisfactory discoveries made, all the properties that I had visited with Dr. Coleman previously were standing idle for the winter, and work was going on at one place only. This latter place is about a mile east of Dryden and south of the railway track. Th property consists of lots 1 and 2, concession 5 of Van Horne township. Messrs. J. Monroe and H. G. Hutchison own the property and have given an option to the Eastern Townships Mining and Development Company, Limited, for two years commencing September, 1897. Mr. Francis Bennetts is testing the property for the company and has three men at work. The formation is green schist. There are two ore bodies,—one on each lot. On lot 2 there is a large body of a fahlband nature. It runs east and west and is traceable for 500 feet. It shows a width of 40 feet at one point where test pits have been sunk. The surface is much oxidized and a little quartz is contained in the vein matter. A few test pits have been sunk at different points along the ore body; two of these are on opposite walls at one point. One has been sunk nine feet and discontinued; the other has reached a depth of 14 feet, and is continued. This latter will be sunk at least 75 feet, and a crosscut made at that depth to the other wall. Assays of this ore body run from nothing to $20. On lot 1 there is a vein of white quartz which I saw at one point only, but which was four feet wide. It extended up the face of a bluff about 20 feet high, and is said to be distinctly traceable at the top for some distance. A test pit has been sunk a few feet upon it. Assays run from $7.10 at the surface to $8.50 at the bottom of the pit.

Properties near Dryden.

Locations in Van Horne township.

The New Klondike District

Early in November I visited that part of the country south of the track, between Tache and Brulé, known as the "New Klondike." The best finds were being made five or six miles from the track. There is a small section of country there containing not more than a few square miles which is being rapidly taken up. The

An attractive Region for Prospectors.

formation is principally felsite, but trap occurs also to a certain extent, and the contact with the granite is within three or four miles of the track. The country is very thickly wooded with small evergreens, and although fires have swept through and cleared a large part of it, there is still much difficulty in prospecting. The ore bodies are mostly quartz veins. The quartz is largely of a dark blue or smoky species; some veins are entirely of this nature, while others are composed solely of white quartz and some vary from one to the other. In width they average from a few inches up to eight or 10 feet, and some outcroppings show a width of 40 or 50 feet.

One very promising looking location is 416HW. Near the centre of this location is a vein with a strike of northeast and southwest which is traceable for about 150 yards. It ranges in width from two to four feet and shows distinct walls. The accessory minerals are copper and iron pyrites, malachite, azurite and free gold. Some native copper specimens, which although on a small scale were very striking, were found here also. Several pannings were made during my visit with very satisfactory results. There are a number of other large outcroppings of quartz on this location which run from six to eight feet in width, but which have not been traced continuously, and as they would indicate considerable variation in the direction of the vein it is a question whether they are all separate bodies or form two or three veins. But this can be proven by stripping. I saw several other veins belonging to the same parties, and they gave evidence of being well worth testing.

Location 416HW.

Messrs. Walker and Brown, who are partners in a number of locations, are the pioneers of this section. Unfortunately I did not see them while on my visit, and hence did not examine their properties.

Messrs. H. Lowry and C. W. Hale are operating together on a number of locations in the same vicinity. They have disposed of a half interest in their properties to a company, and camps have been erected and development work will be commenced right away. I saw some of their veins and they appeared to be very good.

Before leaving this part of the country I may say that several reports are made of discoveries around lake Minnetakie. I did not visit this part, but am told that development is going on in one or two places and that a number of locations have been surveyed. Lake Minnetakie is reached by road from either Wabigoon or Dinorwic. A wagon road is being cut from the former place, and there is a wagon and canoe route from the latter place. The distance is about 35 or 40 miles.

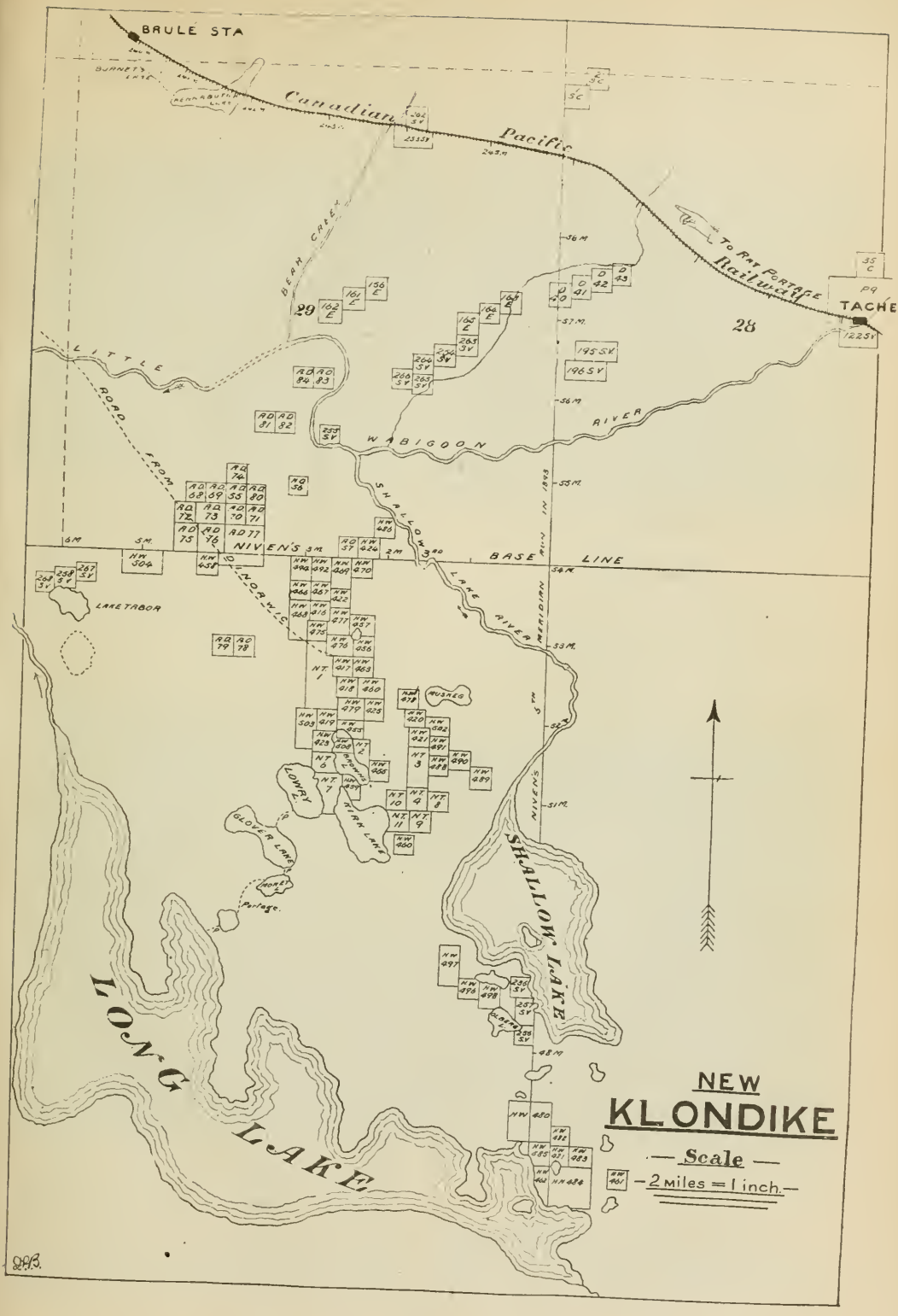
Lake Minnetakie.

Mines north of Lake Superior

I spent several weeks last summer around Jackfish, north of Lake Superior, and visited a few properties which I will next mention.

South of the track at Schreiber is a deposit of iron pyrites which is being mined for the manufacture of sulphuric acid by the Davis Sulphur Ore Company of New York. The location is R606, containing 40 acres. A man named Morley owned it originally and did a little work upon it. He sold out to the present company in the spring of 1897, and they began operations on June 23 of the same year. Prof. Willmott and I visited the place on July 25. The deposit is apparently a vein. An open cut has been made upon it 100 feet long and averaging 12 feet in depth. The contents of the ore body are pyrite and pyrrhotite, which occur in distinct masses close together. There is 50 or 60 feet of pyrite with an average width of 2½ feet, and alongside of this the pyrrhotite, which is of greater extent, but valueless. So far practically nothing is known as to what the extent of the deposit will prove to be, but it will be mined as long as it continues to pay. The open cut is on an elevated portion of ground, and a tunnel has been commenced near the foot of the hill with the intention of attacking the body lower down to make the work of mining more economical. Both the pyrite and pyrrhotite are taken out, but the former only is saved. There was about one hundred tons of it on the dump on the day of our visit, and five weeks later the manager informed me that this had been increased to about four or five hundred.

Iron Pyrites Mine at Schreiber.


BRULE STA
Canadian Pacific Railway
To Rat Portage
TACHE
BEAR CREEK
LITTLE ROAD FROM NIVENS
WABIGOON RIVER
SHALLOW LAKE
BASE LINE
NIVENS
LAKE TABOR
LONG LAKE
GLOVER LAKE
Portage.
29
28
NEW
KLONDIKE
Scale
2 miles = 1 inch.

The ore will be shipped to chemical works in different parts of the United States. It will likely be taken to lake Superior, which is a mile and three-quarters distant, and to which a road will require to be constructed. A good wagon road a mile and a quarter long leads to the C.P.R. station at Schreiber.

Several test pits have been sunk to depths of from five to ten feet at different places on the location prospecting for a continuation of the deposit, but poor success has been met with excepting in one case, where pyrrhotite was struck. The country rock is trap, and what appears to be a boss of granite occurs near the ore body. The test pits were sunk through drift material which covers the greater part of the rock.

There were 12 men employed, five of whom were miners. Two buildings, a boarding house and a blacksmith shop, have been erected.

Otisse Mine.

On the afternoon of the same day Prof. Wilmott and I went out to the Otisse mine, which was the only important place where development work on a gold vein was going on in that section of the country. This mine is about four miles east of Schreiber and about a mile north of the the railway track, from which a foot trail leads to the locations. The latter consist of 216 and 217AL, containing 40 acres each. They are owned by the Otisse Mining Company, with head office at Schreiber. Mr. S. Otisse is manager of the mine. There are five veins on the property, but work is confined to one only. It has a strike of northeast and southwest. Two shafts are being sunk 1,200 feet apart. No. 1 shaft, which is the more northerly, was 34 feet deep on the day of our visit. There is four feet of vein shown, and only one wall reached. The vein matter is quartz and country rock, charged with pyrites. No. 2 shaft was 30 feet deep, and showed 2½ feet of vein matter. There is a force of 12 men, nine of whom are miners, and work is carried on by day and night shifts.

The Otisse Gold Mine.

The Empress Mine.

Next day we went to Jackfish and visited the Empress mine, which had been closed down since May 24, 1897. Reports of this property have been made previously, but I will give a review of the extent of the work done up to date :

Work on the Veins.

Prospecting has been done on four veins, a test pit having been sunk on each, and on one of them several pits. On No 1 vein a pit has been sunk eight or 10 feet ; on No. 2 vein there is a pit 18 feet deep ; on No. 4 vein there is one 12 feet deep ; and on what is believed to be the junction of Nos. 3 and 4 vein a pit has been sunk 20 feet. On these two latter veins, which are about 30 feet apart, adits No. 1 and No. 2 have been driven 46 feet and 70 feet respectively They are connected by a crosscut at the end of No. 1 adit. Fifty-five feet from the entrance, in adit No. 2, a crosscut has been driven north 12 feet. Over the adit an open cut has been made on No. 4 vein 80 feet long and about 15 feet deep on the average. A rise has been made from the adit underneath to the open cut, a distance of a few feet, about 48 feet from the entrance. A little open cutting has also been done on No. 3 vein, over No. 1 adit.

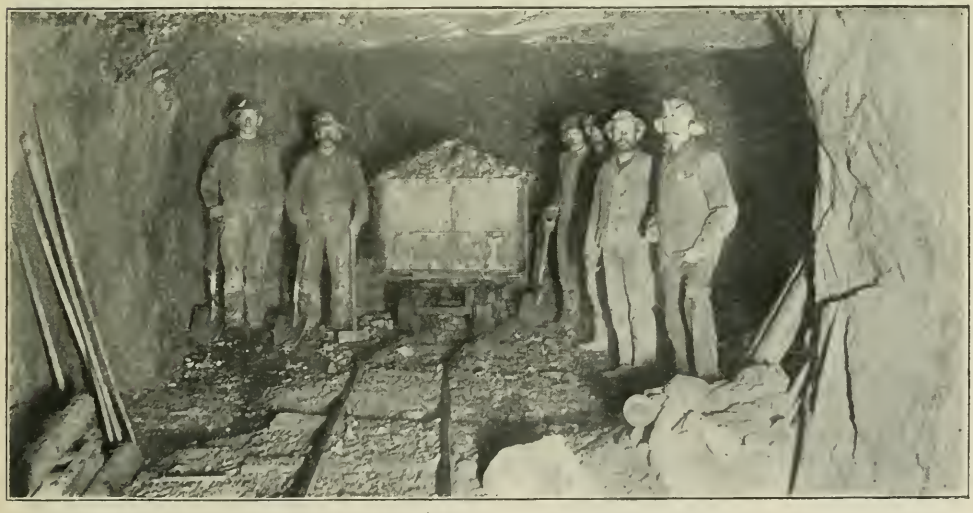
The Tunnel.

Before mentioning the tunnel I will say a word about the conditions under which the veins occur, for the sake of completeness, although this has been all described before. With regard to the topography, the veins are on the side of a hill which rises to a considerable height (probably three or four hundred feet) above the valley or depression which extends along the southern part of the location. They are all close together and parallel or roughly so, probably joining at some point to the east, as is believed to be the case. Now a tunnel has been driven north into this hill, cutting the veins at a depth to give a certain amount of stoping ground above, and also sufficiently elevated to enable the ore to be trammed over a level tramway to the rock house of the mill.

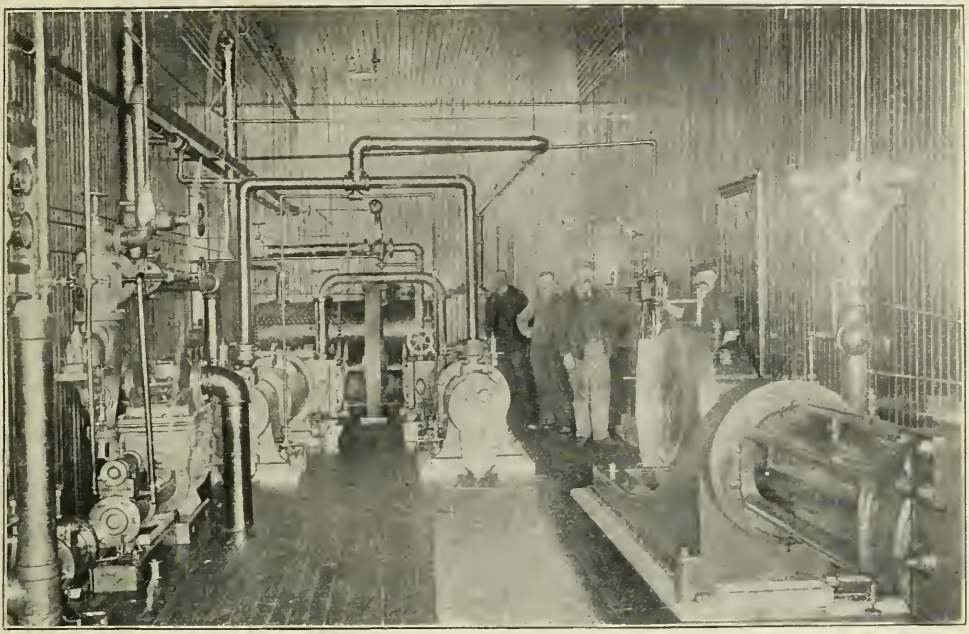
The tunnel has been driven 417 feet. At a distance of 229 feet from the entrance, drift has been made along the vein 35 feet east. At a distance of 263 feet from the entrance a drift has been carried east along a vein 82 feet and one west 31 feet. At a distance of 386 feet from the entrance a drift

Sultana Mine. Second level, at end of south drift, p. 46.

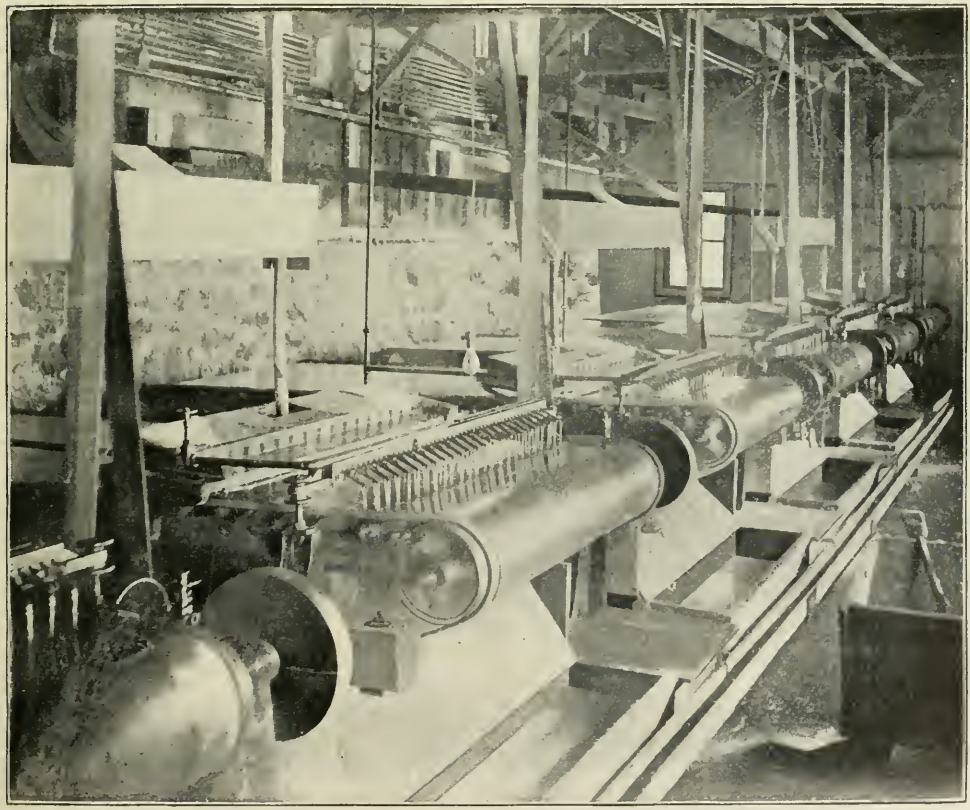
Sultana Mine. South drift of fifth level, p. 46.



Sultana Mine. Fourth level, south of main shaft, p. 46.



Engine and compressor room of the new Sultana Mill, p. 47.



Vanner room of the new Mill, Sultana Mine, p. 47.

has been made along a vein 32 feet east and 84 feet west. In drift No. 1 some overhand stoping has been done.

In all the drifts the veins are practically the same, being from six to eight feet wide, and consisting of hornblende schist and quartz, all heavily charged with pyrites. As a general rule the greater part of the vein matter is schist. Quartz bodies occur at one or two other places in the tunnel where no drifting has been done. There is plenty of vein matter in sight, and the only apparent reason for the discontinuance of work is that the ore is low grade. This is the general report with regard to the property, and that it can only be successfully treated by a large stamp mill.

The Veins.

There is an air compressor, and machine drills for drilling. Tracks are laid along the tunnel and drifts, and cars can be run direct from the working faces to the mill. The mill is situated south of the tunnel, and is connected with the latter by a short level tramway which runs to the rock house above the former.

Drilling and Tramming.

The machinery of the mill consists of a sizing screen, Blake crusher, two 5-stamp batteries, a hydraulic classifier, three Frue vanners, a Rand air compressor, two boilers, a steam engine, pump and tank. The machinery is kept in good condition, and is coated with oil where necessary as a protection against rust. There is a room adjoining the mill containing from 50 to 100 tons of concentrates, which are the result of accumulation while the mill was running.

The Mill.

An unlimited water supply in summer is got from several small lakes about 500 yards from and about 300 feet above the mill. They have all been dammed and a pipe laid to the mill. In the winter the water is pumped from a small creek which runs past the mill. A well has been dug in the same about 150 feet from the mill and a pump stationed there.

During last year a 12 by 40-foot addition was made to the mill for a new boiler and the air compressor, and a 12 by 14-foot addition for storing the concentrates. The other buildings consist of the mill building, boarding house, dressing room, assay office, machine shop, blacksmith shop, stables, grain shed, two powder houses, oil house and pump house.

The adits on No. 3 and 4 veins are timbered at the entrances. Test pits and shafts are all fenced as directed. A dressing room is provided near the tunnel. In the mill a guard rail must be placed around the fly-wheel, belt and crank of the steam engine when operations commence again.

Condition of the Mine.

Other Locations near Jackfish.

On August 2 I went out to the camp of a couple of men, Messrs. Walker and Brown, who were prospecting about six miles east of Jackfish, near the railway track. They had discovered a large outcropping of quartz south of the track, but it did not appear to be traceable any distance. North of the track one or two finds had been made ; one was a large quartz vein which they said could be traced a considerable distance, and the others were large fahlbands containing more or less quartz, and much oxidized on the surface. Assays were unsatisfactory. I learned afterward that Mr. McBain of Port Arthur had an interest in some properties in this vicinity, and that the ore bodies were fahlbands.

Prospects near Jackfish.

On August 8 I visited two locations, 672 and 673X, about two miles beyond the Empress mine, belonging to Peter Nelson of Jackfish. Mr. Nelson told me that he had traced the vein four miles, and that it averaged about 10 feet in width. I saw the outcropping at two places only, about 100 feet apart. Some blasting had been done at these points and the vein showed a width of from six to 10 feet. But the rock was all covered with a thick growth of trees and muskeg, and the exposures were long distances apart, making the examination unsatisfactory. Some encouraging assays were obtained.

On August 9 I went out two or three miles east of Jackfish to examine locations V4 and 5 with Mr. Pym of Toronto, who had an

interest in them. These locations were surveyed a number of years ago. We walked along the shore of the lake where the rock was exposed and found two small veins running inland from the water's edge. They were two or three feet wide and consisted of pyrites and quartz—the former in excess. They were only exposed for a few feet at the shore, as the rock was covered with a thick layer of earth above high water mark.

Megatherium Mine.

Next day I visited the Megatherium mine, about two miles and a half northwest of Jackfish, on Jackfish bay. This property was worked in the spring, but has been closed down all summer. The workings are about a mile and three-quarters from the water. There is a large exposure of quartz 10 or 12 feet wide, but which I am told is traceable only a short distance. It is in the bed of a small creek, and the water had to be dammed and turned off into an artificial ditch which joined the old channel farther down. A shaft had been sunk to a depth of 30 feet, but was full of water at the time of my visit. Boarding camps have been built near the bay.

Locations near Middleton.

Locations near Middleton Station.

On August 11 I went to Middleton with Mr. Duncan Mc'ntyre of Jackfish to examine locations 590, 591 and 592X, owned by Mr. J. E. Newsome of Port Arthur. These locations are two and a half miles north of the railway track, and the same distance west of Middleton. We visited the properties and examined some of the veins, but I had a chance of examining it more thoroughly on the 20th of the month, when I was enabled to see all the veins in company with the original discoverer. The formation is trap and green schist, with a strike of east and west. There are four or five veins besides some felsite dikes and fahlbands. All the veins except one, No. 4, run east and west, while No. 4 is apparently a fissure, as it runs north and south. No. 1 vein, which is farthest south, outcrops in one place as a small mountain of ore about 400 feet long, over 100 feet wide, and rises one to two hundred feet above the ravines around. The material appears to be all quartz on the surface and felsite on the west bluff, which is the boundary at that end. It is heavily charged with pyrites in places. Mr. Finlay D. Grant, the prospector, informed me that it could be traced for miles, but the only other outcropping, which was doubtless a continuation of the same, occurred about two or three hundred feet to the east of the large body. It was 25 or 30 feet wide as far as could be determined from what little stripping was done. No. 2 is a vein seven or eight feet wide of nearly solid quartz, which is not exposed very far, but, it is said, can be traced for a good distance. No. 3 appears to be one of the best veins. It is traceable for over half a mile and shows a good width. In one place it measures 14 feet of solid quartz, and at other places from three or four to eight or 10 feet. But like all the veins, it is covered with moss and vegetation and is only seen where this has been stripped off. A little blasting and test pitting has been done on this vein, as well as one or two others on the property. At the north end of the property is a large fahlband which crosses the locations. It measures 70 or 80 feet in one place. Parts of it were very much oxidized. No. 4 is apparently a fissure vein. It runs north and south on 592X, and outcrops in two places a few hundred yards apart. It shows a good width where exposed.

These ore bodies are nearly all unusually large, but it is probable that they will prove in most cases to be low grade, and that only large stamp mills can treat them successfully. I saw several other large veins in this part of the country, but it is likely that they are all the same in this respect.

Eberts and Johnson properties.

On our way back we walked into a property about a mile north of the track, worked by Messrs. Eberts and Johnson of Detroit, who had been there all summer, and had ceased operations a few days before our visit and gone home. There was a large outcropping of quartz about 80 feet long and about 70 feet wide, which was well exposed and rose above the general level a few feet. All around the rock was covered with earth and vegetation, so that tracing was difficult. In the centre a shaft was sunk to probably 20 or 30 feet, but contained some water.

Two prospectors have been working all summer on the Slate islands, about seven or eight miles out in lake Superior from Jackfish. I am told that a number of veins have been discovered, but I did not get a chance to visit the place.

On the Slate Islands.

Magnetic Iron Sand.

On the 13th we took the train to Peninsula for the purpose of examining a reputed deposit of magnetic sand in that vicinity. Both east and west of this station along the track for a few miles the formation is sand, blown into dunes which cover hundreds of acres, and extending to the lake shore a short distance away. The black sand in question, we were told, was to be found in a railway cut about four miles east of Peninsula station. We walked out, and, digging about 18 inches in a couple of places where several feet of sand had been removed from the surface, we passed a layer 12 or 14 inches thick of magnetic sand, garnets and white sand, the first being predominant. We were informed that this layer could be found at any point by digging several feet. According to the formation here there might be hundreds of acres of this magnetic sand lying underneath the wind-blown material on the surface, but how the thickness of the layer would vary can only be known by examination. It would however be a deposit which should readily lend itself to treatment by Edison's electro-magnetic process of treating low grade iron ores.

Deposit of of Magnetic sand at Peninsula.

The Silver Mines

Two of the old silver mines west of Port Arthur have opened up again; and it appears that others will follow in a short time. These two are the East Silver Mountain and the Badger. Information regarding these mines can be got from the first, second and third Reports of the Bureau of Mines and the Report of the Royal Commission of 1890.

Lake Superior Silver Mines.

I could not conveniently visit both mines on account of the train service, so I went to the East Silver Mountain. Mr. A. M. Wiley of Port Arthur, who is interested in the Badger, informed me that they were not doing any actual mining work at that property yet, but were simply timbering up some of the old drifts which had been pumped out for the purpose of examining the vein with a view to the commencement of mining. A car load of ore weighing 15 tons had been shipped to a smelting works.

The Badger Mine.

No actual mining was going on at the East Silver Mountain either, but a stamp mill had been put in for the purpose of milling the old dump during the winter, while the intention was to commence mining in the spring. This mine is now owned by the Argentite Mining and Reduction Company, with head office at Cedar Rapids, Ohio. It was purchased in March, 1897, and operations commenced two months later. Mr. Richard Sandoe is manager. The only mining work done last summer consists of the stoping out of 70 or 80 tons of ore at the 60-foot level in No. 4 shaft. This was done early in the season. The mill was put in for the purpose of treating the old dump of No. 1 tunnel, which is said to contain about 3,000 tons, and it is believed to average probably 25 oz. per ton. It had only been running a few days off and on at the time of my visit, as all adjustments had not been completed. The machinery consists of a Tremaine steam 2-stamp mill, a Gates feeder, a Brown's 2-compartment hydraulic sizer, two Frue vanners with 6-foot belts, one plain and one corrugated, a 6 horse power marine engine and a 40 horse power boiler. This engine was only temporarily installed while awaiting the fixing of their own engine. The milling machinery is all from the Gates Iron Works. The battery screens are 35-mesh. Experiments were made with 20 and 25-mesh, but they were found to be too coarse. The capacity of the mill is about 12 tons per 24 hours. It is conveniently situated on a slope about 150 yards from the dump at the mouth of the tunnel. The ore is carried in a sleigh, but in the summer when mining commences a tramway will be built over which the loaded cars will be run by gravity.

East Silver Mountain Mine.

I did not go into the tunnel as it was blocked at the entrance, but I got the following notes on the work they intend doing in the spring and the extent of developments from Mr. Sandoe. No. 1 tunnel, which is

now in 1,800 feet, will be driven in through to shaft No. 4, which means 80 or 90 feet more of driving. Then 200 feet more of driving will give 2,600 feet of stoping ground along the vein, with a height of 210 feet. The vein has an average width of about four feet. All ore over 100 oz. of silver to the ton will be shipped, and all under that and over 5 oz. will be milled. Mining and milling will cost about one dollar per ton, and milling the present dump about fifty cents. It is expected that an additional steam mill will be put in in the spring if the present one proves satisfactory.

The water supply is got from Lake Daunais on Silver Mountain, about three-quarters of a mile from and 100 feet above the mill. There is plenty of water for milling purposes. A $1\frac{1}{2}$-inch pipe has been laid from the lake to the mill.

Water supply.

There is a force of six men at work.

The mine is about a mile from Silver Mountain station on the P. A. D. & W. Railroad, and about thirty-five miles from Port Arthur. A good wagon road leads from the station. Plenty of good buildings are on the property, which were put up at the time of previous operations.

Mines of Eastern Ontario

By Aaron Slaght, Inspector

I HEREWITH present my Report on the mines situate in that portion of the Province north and east of Sault Ste. Marie, for the year 1897.

The principal mines in this part of Ontario were visited during the year, and the Report also includes a number of properties on which minerals have been discovered and only preliminary development done, showing the broad area over which they extend. From the several larger properties now being worked successfully, it may be inferred that a considerable number of these new discoveries will prove equally remunerative when fully developed.

Western Ontario, British Columbia and the Yukon district have of late attracted a large share of the attention of capitalists, while the rich resources of this extensive mineral region in Eastern Ontario have been relatively overlooked, although they present favorable opportunities to reap a satisfactory return for judicious investments. That large stores of wealth are yet to be won from the mines in this part of the Province can scarcely admit of a doubt, when even a cursory survey is taken of its favorable geological conditions, the class and value of minerals found, and the wide territory over which they extend.

Admirable facilities are offered by railway and water communication, while water power for driving machinery can be utilized in a number of localities, and there is an abundant supply of wood for fuel.

Skilled labor may be secured at reasonable cost, and the most approved kinds of machinery and appliances for mining and treating the ores may be easily and quickly brought in.

Gold Mines

The Comstock gold mine is situated on location WR40 in Rathbun township; it is owned by the Comstock Gold Mining and Development Co., Limited, with capital stock of $600,000. Previous to the transfer of the property work had been done by the former owners by stripping several veins and opening a few test pits and sinking one shaft 16 feet, and also sinking the shaft on which work is now being done to a depth of 30 feet. The present owners acquired possession early in the year, and since March have continued to sink the working shaft until it is now down 102 feet, following the vein for the entire depth at an incline of 60° south. The vein's course is northwest and southeast, and has an average width of 2½ feet, measuring at the bottom nearly four feet. The shaft is timbered down 50 feet to solid rock; the ladder-way was not cased off from the working part of the shaft, nor provided with rests at proper distances, which I directed should be done before extensive mining operations were attempted. At 90 feet from the surface a southeast drift was being commenced which was expected to tap a vein exposed at the surface at the distance of 55 or 60 feet. Several small parallel veins only a few feet apart have been discovered running west of northwest, and it was intended to crosscut from the drift to tap these also. Some stripping on veins has been done, and a couple of test pits have been opened. A portable hoisting engine of 12 h. p. was in use, and the rock was raised in buckets having guides in the shaft. A pulsometer pump was placed at the lake, 170 feet distant, to supply water at the mine. A Sargeant drill had recently come to hand, which would soon be in use.

The Comstock Mine.

The property is favorably located on the border of Boland lake, and the landing for the comfortable little steamer plying on lake Wahnapitæ is within a few rods of the mine. Eleven hands were employed, six of whom were engaged in mining. There is a

comfortable boarding house 18 by 35 feet, containing cook room and sleeping apartments, a blacksmith shop, and barn to accommodate three teams. About 80 cords of wood were on hand. The Inspector's book with necessary entries was left with Mr. H. F. Downing, captain of the mine. I am informed that the mine has been closed down for the winter, but that work will be resumed vigorously in the spring.

The Crystal Mine.

The Crystal gold mine was visited in the last of June, when a total force of 20 men was employed, consisting of 10 miners, two mill men, two blacksmiths, three surface men and a clerk and foreman. Mr. Daniel Morrison of Nova Scotia had charge of the work at both mine and mill.

The main or No. 1 shaft was not being worked at this date, and was partly filled with water. The manager, who had recently taken charge, could not inform me if any greater depth had been made since last inspection, when it was down 100 feet. For description of work done in the shaft, see Report for 1896, p. 268. Work on the No. 2 shaft had been recommenced and it was sunk to the total depth of 37 feet. At 10 feet from the bottom a drift had been run in eastwardly 36 feet and southerly 13 feet, making a total of 49 feet, and ore was being stoped in the drift to supply the mill. The No. 3 shaft, or incline tunnel, was not being worked, and was nearly filled with water. The water had been pumped out of the No. 4 shaft and it was sunk to a total depth of 43 feet, being six feet additional since the last measurement. At the bottom, drifting extended east 23 feet and west 15 feet. Ore was also being stoped out in these drifts to supply the mill. The No. 5 shaft on the east side of the hill was partly filled with water; its depth is said to be 30 feet. I directed that it should be covered to prevent accident, and that all dangerous unused openings should be fenced. At 150 feet southeast of the main shaft a tunnel of four by seven feet had been driven in westerly 33 feet, and at the back end a raise of four by seven feet had been made 15 feet, measuring from the floor of the tunnel.

Extent of the Mining operations.

The foreman informs me at a recent date that work has been continuous in the mine since my visit and consists chiefly of stoping, except that the incline tunnel (No. 3) has been driven to the distance of 106 feet; also that the shaft north of the tunnel (No. 4), which was down 43 feet at the date of my inspection, has been continued to a depth of 110 feet and sinking continues.

A five-stamp mill has been constructed for the company by the Jenckes Machine Company of Sherbrooke, Que., and provision is made to add other five stamps when required. The mill building is situated on the shore of Boland lake. It is 25 by 60 feet, with annex for boiler and engine of 24 by 28 feet. A reservoir of 1,500 gallons capacity supplies the water for the boiler and mill, which is lifted by a pump from the lake. The stamps are of 850 lb. each, have a 5-inch drop and were running at 85 per minute. A crusher of the Jenckes Machine Company's make has a capacity of six tons per hour. The ore when crushed falls into a bin and is fed by a Challenge automatic feeder to the stamps. It is reduced to pass through a 35-mesh screen, and passes over an amalgamating plate $4\frac{3}{4}$ by 12 feet. The pulp flows over a Frue vanner of six by 13 feet, and the tailings are carried out into the lake. The mill is very substantially built. Beginning with the ground floor, the raise to the amalgamating floor is $4\frac{1}{2}$ feet, a similar raise to the stamp floor, and a raise of 20 feet to the floor where the rock breaker is placed. Good stairways lead up to each apartment, with railings where required. The mill was started on ore May 19. At the date of my visit it was being run 10 hours per day on a lean quality of ore, obtained chiefly from the development work then being carried on. Power is supplied by a 60 h. p. boiler and an engine of 35 h. p., both of which were in excellent condition. About a cord of wood was used per day, and a supply of from 50 to 75 cords was on hand. The ore is conveyed from the workings into the upper part of the mill over a horse tramway. A complete hoisting plant of the Jenckes Machine Company has been provided, which it is expected will be put in place soon.

A five-stamp Mill in operation.

A saw mill has been built by the company at a few hundred yards from the gold mill, on the shore of lake Matagamasing, where all lumber necessary for the company's use is cut. It is 30 by 90 feet, with boiler of 60 h. p. and engine of 45 h. p. Two lodging houses, an office and store, assay office, private residence, blacksmith shop, ice houses. wharf and boats have been constructed on the location. The powder house is situated across the bay on the shore of the lake, free from all danger. The company conducts a boarding house for accommodation of its employes.

Saw mill and Camp.

Hubbell Mine.

WH50, adjoining the Crystal mine, has been purchased by Mr. Hubbell, who late in the year had work done by stripping some outcropping veins and sinking two shafts of 15 and 25 feet. Work will be resumed in the spring.

The Hubbell Mine.

Last Chance Mine.

The Last Chance mine was idle at the date of my visit ; for description see last report of Bureau, p. 269. I have been informed recently that several hands were employed working it during the latter part of the year under the direction of Mr. Chapin, and that its outlook is excellent.

Last Chance Mine.

Gold Cliff Mine.

Gold Cliff mine on Kookagaming lake, is owned by a Toronto syndicate and has been worked during the year. For location and description see last report of the Bureau, p. 57. Mr. Joseph Contre, who had charge of the work, states that he began with a force of six men in January and continued work until the middle of June, driving in a tunnel 182 feet. At about 100 feet from the mouth of the tunnel a vein of five inches was cut, and at 40 feet further another vein was cut two feet in width.

Gold Cliff Mine.

Charlebough Mine.

About six miles south of the Gold Cliff, on the same lake, work has been done on the property known as the Charlebough mine by sinking a shaft 35 feet, but it was idle at the date of my visit. It has recently changed owners and I am informed that work was begun again later in the year with a considerable force, under instructions from the owner, Mr. Ewen McKenzie of Toronto.

Charlebough Mine.

The difficulties of reaching the Wahnapitae mining region hitherto have been greatly lessened by the running of daily stages over the roads to the lake, as well as by the comfortable little steamer Maid of the Mill, which makes daily trips (and oftener if required) to the mines during the season of navigation. The boat is owned by the Wahnapitae Navigation Company, and run by Capt. William Lemoyne. She has a speed of 10 miles per hour, and is registered to carry 20 passengers. The winter roads are usually good.

Improved access to the Wahnapitae region.

Dwyer Mine.

The Dwyer mine is situated on lot six in the fourth concession of Drury township, and embraces 240 acres. It is three miles west of the road leading out from Worthington station on the C. P. R. to the Inez mine, and about six miles by road from the station. The property is owned by the John Dwyer Gold Mining Co. which has a capital stock of $450,000 in shares of $1 each. Some time was spent in going over the property with Mr. E. Robinson, who had charge of the work. There are five veins in all which run parallel with each other in an east and west course. The outcropping of No. 1 vein is near the west boundary of the lot and has been traced for the entire distance across it. varying in width from four to 30 feet. A shaft of eight by nine feet was sunk on this vein to a depth of 32 feet, following a well defined wall and timbered down 20 feet. Quartz taken at 15 feet from the surface assayed $4.60, and at the bottom of the shaft it gave $24. Vein No. 2 is 213 feet south of No. 1. and has been traced about half way across the lot, varying in width from four to 25 feet. From a test shaft of a few feet depth near the west boundary of the lot, and from several places where the vein had

The Dwyer Mine in Drury township.

been exposed by stripping, the ore gave assays of $14 to $26 in gold and over $2 in silver. Vein No. 3 is 25 chains south of No. 2, and has been exposed for a distance of 700 feet, commencing near the west limit of the lot. A test pit of six feet had been sunk in the vein, but no assays had been made of the ore. Vein No. 4 is about equally distant from No. 1 and No. 2 veins, and has been traced 600 feet. Vein No. 5 is south of No. 2 about 350 feet, and has been traced 1,500 feet, showing a width ranging from three to 12 feet. Eight men were employed working the property at the date of my visit.

A small boarding house with sleeping camp has been erected. A tent was being used by the manager, but a comfortable dwelling was in course of construction. There is an abundant supply of timber, and I was told the small streams near by give an ample supply of water. Mr. Robinson writes of late date that work has been discontinued for the winter but will be resumed in the spring. The shaft is now down 40 feet deep, with a free wall and showing a fine body of quartz. Thirteen assays have been made of the ore, nine from the vein worked at the time of my visit showing an average of $14.45, and four from other places which gave an average of $14.42 per ton.

McGown Mine.

The McGown mine is owned by the McGown Gold Mining Co., Limited, of Parry Sound, incorporated under the laws of Ontario, with capital stock of $1,000,000 divided into shares of $1 each. The property consists of lots 146 in A and B concessions, and lot A in B concession in the township of Foley, in all about 169 acres. Since my last report the work consists of sinking a shaft of 30 feet on No. 1 vein, known as shaft No. 1, and from which 15 to 20 tons of excellent ore has been taken. The open cut running east and west, previously reported, has been worked to a limited extent and several tons of ore taken out. One hundred feet west of the shaft an open cut has been made on the vein, showing ore similar to that taken from the shaft. Eight hundred feet easterly of the shaft the vein has been opened by a cutting 10 by 20 feet, which exposes a fine body of ore. At 100 feet north of this opening a vein outcrops which has been opened 30 feet in length by six in width. Other veins following the same course northeasterly and southwesterly have also been discovered. Across the small McGown lake, about 300 yards in width, an outcropping of quartz has been discovered from which some rich ore has been obtained. The Government diamond drill was used during the early part of the summer, and the veins tested to the depths of 40, 80 and 144 feet with satisfactory results.

The McGown Mine in Foley township.

Mr. James Calder, one of the directors of the Company, writes me under recent date: "West of the shaft we have driven a tunnel into the hill 40 feet, and we have a a lot of splendid ore on the dump. Six men are working and we shall continue right on. It is intended to put up a smelter in the spring, as we think this is the best way to treat the ore. A large body of ore can be taken out along the open cuts, which will be easily handled."

Mr. Thomas Heys of Toronto has reported under date of January 13, 1898, that he has assayed samples of ore from the mine taken from depths of 24, 28, 30 and 33 feet respectively, with the following results: At 24 feet, gold $3.60, silver a trace, and copper $36.85, making in all $40.45. At 28 feet, gold $2.40, silver 18 cents, and copper $79.64, being a total of $82.20. At 30 feet, gold $4.80, silver 24 cents, and copper 15.92, a total of $20.96. At 33 feet, gold $14.46, silver $2.27, and copper $79.64, aggregating $96.37. From these results the McGown mine might more properly be classed as a copper mine, the average value of the copper contents of the four assays being $53 per ton

Assays of the Ore.

Beatty and Wilcox Mine.

Messrs. Beatty and Wilcox have opened a mine on lot 10 in the fifth concession of Cowper. A shaft of 10 by 10 feet has been put down to a depth of 25 feet. At 10 feet a sample of the ore assayed $9.70 in gold and 70 cents silver, and at a depth of 24 feet the ore gave $34 in gold, the vein being the

The Beatty and Wilcox property in Cowper.

entire width of the shaft. The property is a mile from Georgian bay, and is in a direct line six or seven miles southeasterly of Parry Sound.

Belmont Mine.

The Belmont Mine.

The Belmont gold mine, on the east half of lot 20 in the first concession of Belmont, had been been lying idle for some time, but recently it has changed proprietors. The Cardona Exploration Company, Limited, has taken it over after one of the owners had examined it. The company is a private one, composed of wealthy English capitalists, and has been operating mines in England, Scotland, Sweden, Spain and Norway. Mr. David Kerr, who has had charge of works for the company both in Spain and Norway, arrived August 27 from the lattre country to assume the management of this mine. At the time of my visit active measures were taken to commence mining work, as well as for the construction of a 10-stamp mill. An order was given to a Peterborough firm for a substantial plant to work the mine, and negotiations were going on with the same firm for the mill. Mr. Kerr informed me that work would begin at the mine almost immediately and he hoped to have the mill in running condition within a few months.

Bannockburn Mine.

The Bannockburn Mine.

About a year previous to my visit (September 1) the Bannockburn property had been transferred to a Toronto company whose president is Dr. A. W. Hammill of that city. Work had been done by the former owners on lot 28 in the fifth concession of Madoc, at a distance of 300 yards from the mill, by stripping the vein and blasting it open for 700 feet, and sinking four shafts at different points to the respective depths of 26, 30, 45 and 30 feet. In the deepest shaft, at 32 feet from the surface, a drift had been run in 17 feet. New work has been done by the present owners by sinking this shaft 75 feet, and extending and stoping in the drift, as well as by erecting a shaft house and installing a hoist plant of 25 h. p. Underhand stoping has been done along the cut in a number of places, and a considerable quantity of ore taken out. Work had been suspended a short time before my visit, and the shafts were partly filled with water. New work has been done on the lot by sinking a shaft known as the Hungerford, 500 yards west of the mill, to a depth of 30 feet, showing a vein of gold bearing quartz 10 feet in width.

Other exploration work undertaken.

The company has taken options on lots in the county of Hastings covering over 4,000 acres, and on several of these a considerable amount of development has been done. I visited what is known as the St. Joe mine on lot 25 in the fifth concession of Madoc, two miles south of the mill, where three men are employed. The main vein of this mine strikes nearly due east and west. At about 1,000 feet from the Hastings road, and about 40 feet from the edge of a bluff, a shaft has been sunk to a depth of 30 feet, and is all in ore. When this depth had been reached it was decided that the mine could be more advantageously developed by simple quarrying, and the men were set at work to remove the ore on the north face of the shaft from the surface downwards. From this shaft and cut about 300 tons of ore have been taken at an average cost of 30 cents per ton. Three hundred feet east of the shaft another open cut was started late in August, which has been driven southerly into the bluff for about 12 feet. The intention is to continue this drift until the foot wall is reached. From surface indications and measurements I figured that the foot wall is 70 feet distant from the point of entry. This is the narrowest part of the main vein. Assays of the ore made at different times gave $14, $22, $26, $60.66, $38, $42, $30, $3.16 and $2 per ton.

The Bannockburn Mill.

The mill of the Bannockburn mine had been shut down a day or two before my visit, and a clean-up of a 20-ton lot of ore was then being made. Since the description given in a former report the following repairs and additions have been made to the mill plant: A new Blake crusher, with 25-ton capacity in ten hours; new belting and pulleys; double plated mortars for both batteries, of Fraser and Chalmers make; new battery shoes, bosses, dies, and tappets for both batteries,

and new foundations and frames; a Frue vanner with corrugated belt, one of the old ones being repaired, with new foundations for both; nine new plates, 20 by 20 inches; and a Cook amalgamator. The mill has capacity for treating 20 tons of ore daily, and is now used chiefly for testing the ores obtained from the several properties being prospected by its owners. Instructions were given to have the unused shafts and open pits fenced as a precaution against accident, and the manager's attention was called to the requirements of the Mines Act respecting the same. In a recent note the manager informs me that all work at the mine was discontinued soon after my visit for want of capital.

The Deloro Mine.

Properties of the Company.

The properties of the Canadian Goldfields, Limited, consist of lot 9 in the eighth concession of Marmora, 10 in the sixth, the west half of 10 and the north-east quarter of 8 in the ninth; in all, 525 acres. The company is composed of London, Eng., capitalists, and the works are in charge of A. J. G. Swinney, M.E., superintendent. The properties were acquired early in 1896, and operations were commenced in September of the same year. The former owners had worked the mine extensively, and put up a large milling plant which has been lying idle for the last twelve years.

Workings of the Mine in the Gatling shaft.

The old workings consisted of a shaft, No. 1, eight by 12 feet, known as the Gatling shaft. It was sunk to the depth of 154 feet at an incline of 55°, being a vertical depth of 127 feet. No additional sinking in this shaft has been done. At 70 feet from the surface on the incline, a level had been run north 119 feet, and south 230 feet. Sixty-six feet north of the Gatling shaft another, known as the Timber shaft, had been sunk to level 1. This shaft has been continued down as a winze, following the vein 79 feet, and connecting levels 1 and 2. At 25 feet north of the shaft a crosscut has been driven in east 38 feet. The north level has been securely timbered, and stoping is now being done. Level 1 south of the shaft has been extended 110 feet, making the total distance south 340 feet where it joins No. 1 level in the Tuttle shaft. At 155 feet south of the Gatling shaft a winze has been sunk 63 feet to level 2 on the incline of the vein. Another winze south of the shaft 260 feet is now being sunk and is down 15 feet. The entire south level has been well timbered, and stoping above and below is now being done. Level 2 is 55 feet from level 1 on the same incline as the shaft. North of the shaft the old works extended 47 feet, and south of it 98 feet. The north drift has been now extended 108 feet, making a total length of 155 feet. At 25 feet north of the shaft a crosscut is being run west and is in 90 feet. Sixty feet of the drift has been timbered and stoping is carried on. To the south the level has been extended 181 feet, making a total of 279 feet, and timbered for the distance of 160 feet; stoping is now being done in it. The total of new work in the Gatling shaft is 400 feet of drifting, 160 feet of winzes, 128 feet of crosscutting. besides the stoping.

Workings in the Tuttle shaft.

The No. 2 or Tuttle shaft, nine by 14 feet, had been sunk by the former owners 62 feet at an angle of 64° west. At that depth a level had been driven north of the shaft 87 feet and a small stope made. Towards the south the level was driven 85 feet. The latter has been extended 62 feet, making the total length 147 feet, and back stoping is now being carried on. At 100 feet south of the shaft a winze is being sunk and is 10 feet down. North of the shaft the level has been extended 57 feet, connecting with level 1 in the Gatling shaft, and back stoping is being done. The total of new work in the Tuttle shaft is 120 feet of levels, 10 feet of winze, and 30 feet of sinking on the shaft, with stoping additional.

Machinery in the Mine.

The timbering in the mine is substantially and neatly done, and where required chutes are put in for conveniently loading the stoped ore into the tram cars, which are run over well laid iron tram tracks to the shafts for hoisting. Four steam drills are used in the mine, and four pumps are provided to keep it free from water, two being in constant use and two are kept as auxiliaries to be used when required. Two Hines safety boilers of 50 h.p. each supply steam

for a double drum hoisting engine of 70 h.p., which serves to hoist at both the Gatling and Tuttle shafts. The skip loads are about 1,800 lb., and about 75 tons of all grade ores are raised daily. A winze hoist is also used for handling timbers and all other materials used in the mine through shaft A, which is 100 feet north of the Tuttle shaft. This shaft also supplies good ventilation in the mine. The poppet-heads, one over each hoisting shaft, are provided with ore bins, each having chutes for handling fine and coarse ore. The skips as raised from the mine automatically dump the ore on the grizzlies, where it is sorted. The first class passes into the bins and is hauled to the mill a distance of a mile and a quarter; the second grade ore is reserved for future use.

Buildings at the Mine.

The buildings in addition to the old mill consist of two poppet-heads, one over each shaft; a boiler and hoisting house (stone) 30 by 70 feet; machine and blacksmith shop, combined with change room for the workmen, 40 by 40 feet; warehouse, 20 by 40 feet; oil house, 12 feet square; powder magazine, 10 feet square; a two-story boarding house with sleeping apartments sufficient to accommodate 40 men; two dwellings for miners and one double dwelling. At the main office are a two-story brick dwelling the lower part used for offices and the upper apartment as sleeping quarters for the single men of the staff; one three-story brick house occupied by the men of the staff with families; five two-story dwellings for miners, now occupied by ten families, and two barns

Condition of the Mine.

The mine manager, Mr. Kirkegaarde, accompanied me throughout the mine and over all outside works, and stated that a force of 76 hands was employed at the mine, 42 on underground work and 34 above ground. In both shafts down to level 1 the part used as ladder or man-way was not properly cased off from the part of the shaft used for hoisting, and I gave directions that the same should be done. The manager stated that this work was being done at nights, when it would not interfere with the hoisting in the day time, and the whole would be completed soon. I directed that proper signals should be placed near the dumping floor of the poppets, to give timely warning to the workmen of the approach of the loaded skips; also that all outside open pits and shafts, of which there were several that were dangerous on account of depth, should be securely fenced, as required by the Mines Act. Otherwise I found the mine in all parts, where work was being done, in a good and safe condition. Apparently due care was observed to protect the workmen from danger and accident. An excellent signal service is adopted in the mine, and proper notices for the same are posted up in conspicuous places. Good provision is also made for handling and storing a day's supply of explosives in the mine, and proper instructions are given for going in and out of the mine by the ladder-ways, which are conveniently and safely arranged.

The new Gold Mill and its method of treating the Ore.

The Deloro mill is situated a mile west of the mine and 250 yards east of the Marmora station on the Central Ontario Railway. The building has three compartments under one roof. The upper or rock room is 14 by 90 feet, the middle or mill room is 30 by 120 feet, and the lowest or extraction room is 70 by 90 feet. The laboratory building is 45 by 60 feet. Besides these there are an office, storeroom and blacksmith shop under one roof, 20 by 50 feet; mill storeroom, 16 by 20 feet; oil house, 14 by 16 feet; and two family residences.

A good stock of ore is constantly kept in the rockshed for supplying the working mills, in addition to which there is a large reserve stacked on the adjacent ground for future use. The ore first passes through the crushers, of which there are three in the mill, two Blake and one of English make. It is then charged by automatic feeders into the pulverizing machines, of which there are also three, one of German and two of English make. The pulverized material from two of these mills is elevated and passed through screens, and thence is conveyed into a dry separating machine, from which it escapes in two streams into cars, the coarser portion of a specific fineness going into the leaching vats, and the finer or almost impalpable powder being reserved for future treatment. In the third mill the pulverized material is drawn from the mill by a rapidly revolving fan

through a screen into an air-tight chamber, the coarser particles therein falling to the bottom and being automatically delivered into cars for removal, while the fine is delivered outside of the building through the fan and is counted of no commercial value. The leachable product is placed in the vats and treated for the extraction of the gold contained by the Bromo-Cyanide process, the gold being dissolved out and afterwards precipitated and recovered in the ordinary manner. The vats for the extracting purposes are eight in number, two for the preparation or strengthening of the liquors, four for leaching (each of them of 50 tons capacity), and two for the reception of the liquors after leaching prior to the precipitation in the manner indicated. There has been accumulated already a large quantity of the ground ore which has been subjected to the treatment for extraction of gold, which it is proposed later to treat for recovery of the arsenic, itself a valuable by-product.

In addition to a small vertical engine of six h.p. used in the extraction room for working the pumps, seven in number, there is used for the mill one boiler of 80 h.p., an engine of 65 h. p., a duplex pump to fill the storage tank, which is of sufficient capacity to supply the mill for all purposes. The water supply is obtained from a reservoir excavated on the adjacent low ground, from which a channel has been cut to Lily creek at a point about 150 yards distant, insuring a constant head of water.

The primary object being to reduce costs, every possible means has been utilized to this end. A very small force is sufficient to work the breakers and pulverizers, and but few hands are required to conduct the extraction process. Preparations are being made to add to the mill building and to increase the capacity for treatment of the ores. The total force employed by the company averages 150 men.

Exploration of properties by the Company.

Operations have been carried on by the company up to August 31, 1897, on 15 lots in the township of Marmora, five in the township of Lake, and four in Elzevir. The Government diamond drill was being operated on lot 8 in the seventh concession of Marmora in August. One bore was put down 300 feet at an angle of 45°, and another half a mile distant was down 150 feet, the formation as shown by the cores being hornblende schist and crystalline limestone.

Craig Mine.

The Craig Mine.

The Craig property comprises the south half of lots 4 and 5 in the third concession of Tudor, 100 acres. It is owned by Messrs. Peter Vanleek, James Maitland, David Robbins and the James Brown Estate of Belleville, each holding an equal joint interest. Gold was discovered on the property several years ago, and the owners opened the mine by stripping the vein for 100 feet and sinking two pits of 10 feet each. The ore was treated at the Bannockburn mill, yielding $4 per ton. The mine remained idle for several years, but late in 1896 a company of Toronto capitalists took an option on it for six months, when the property reverted to the original owners and has been lying idle ever since. During this period a shaft was sunk 100 feet, showing a width of vein at the bottom of eight feet. Several small test lots of ore were shipped for treatment, but the result does not appear to have encouraged further operations.

Diamond Mine.

The Diamond Mine.

The Diamond gold mine is a recent discovery, and is situated on lot 14 in the tenth concession of Madoc, eight miles northeast of Madoc village. D. E. K. Stewart of Madoc had taken an option on the east half of the lot, 138 acres, and was having work done by three or four men at the date of my visit. On the north side of the lot an outcropping quartz vein had been stripped for the distance of 300 feet; and near the middle of the cutting a shaft had been sunk 12 feet, showing a width of vein of five feet, carrying a stringer of a few inches wide of exceptionally rich mispickel ore. On the wall numerous specks of free gold were discovered, and a number of fine specimens of gold have been taken out. One of exceeding richness was shown to me obtained the previous week. Captain O'Neill, who accompanied me to the mine, made a panning of the decomposed material down

a few feet from the surface, which gave a rich showing of free gold. The captain himself has since become financially interested in the property and the shaft has been sunk 20 feet with increased richness of the ore. About 150 yards south of this shaft the vein has been opened to a few feet in depth for 30 yards. Work was being done at this point when I inspected the property on September 2.

Nickel and Copper

Discovery of Nickel, Copper and Cobalt in Foley.

The Boyne mine on lot 35 in the ninth concession of Foley, Parry Sound district, was visited by me on August 12. It is three and a half miles from Parry Sound and one and a half miles from the station of the Ottawa, Arnprior and Parry Sound Railway. The discovery was made about a year ago and a two-thirds interest in the mineral rights was purchased by the Valentyne Mica Mining Company from Mr. Frank LaFex, who retains a one-third interest in the mineral rights. Eight openings have been made on the property, each showing nickel, copper and cobalt. The lode runs east and west with a slight dip to the south. The cap rock has been removed in five places upon the vein and three openings have been sunk of the respective depths of 10, 14 and 20 feet. At the deepest of these the vein shows three feet at the surface and nine at the bottom. The vein also widens in the other two openings from two feet at the surface to five feet at the bottom. The hill rises about 200 feet above the level of the bay, and on the top a large number of outcroppings of ore appear. About $500 has been expended in prospecting, and 90 or 100 tons of ore taken out. Work will be continued and tests made of the value of the ore, of which apparently there is a large body.

Beatty and Wilcox Mine.

Beatty and Wilcox properties.

Messrs. Thomas Wilcox and W. R. Beatty of Parry Sound have secured by lease the mineral rights of the south halves of lots 18, 19, 20, 21 and 22 in the fourth concession of Cowper, and the south halves of lots 10 and 11 in the fifth concession. These properties are situated on Spider Lake bay, an arm of Georgian bay, which affords excellent privilege for dockage. At the shore of the bay there is an outcropping of a lode of copper ore 12 to 15 feet in width, which shows inland for a long distance from 10 to 20 feet in width. Back from the water 20 feet a test pit has been sunk 10 feet, showing the vein to be heavily mineralized. About two chains northeast of the bay another cutting has been made four feet deep, where the ore is equally good. At a further distance of three chains a third opening has been made of five feet in similar ore. Following the vein half a mile another cutting of four feet deep for a considerable length shows very rich ore.

Murray Mine.

The Smelters in Blast.

At the date when the Murray mine was shut down there remained on hand about 6,000 tons of ore which had been roasted by the Vivian Company. During the past year this ore has been treated by Mr. Thomas Travers for Mr. Joseph Wharton of New Jersey. Mr. Travers took charge in August last and completed the work in January of the present year. The old plant was used by Mr. Travers with the addition of two new water-jacketed smelters, and the product in matte has been shipped to the Wharton refining works at Camden, N.J.

Inez Mine.

Trill Mining Company.

The works at the Inez mine, owned by the Trill Mining Company, were shut down at the date of my visit (August 6) with the exception of the roasting heaps, but it was stated that operations would be resumed later on in the season. About 55 hands had been employed in the former part of the year under the direction of Mr. Thomas Travers, manager. The elevated tramway leading out to Worthington station, 4½ miles, had been completed and in use conveying supplies to the mine, and the mine product to the station. It has been usual to make two round trips over it daily, a single horse hauling two cars of two tons each, making four tons each way of a single trip. Seventeen cars of matte averaging 20 tons each have been shipped from Worthington station during the year.

The large inflow of water into the mine prevented accurate measurements being made at the time of my visit. Mr. Travers however gave results of work since last inspection. In pit No. 1 an extension of the stope had been made 25 feet in length, 10 in width, and a raise of eight feet. This pit is known as level 1. The shaft leading down to level 2, 67 feet, has been properly fitted up, excepting that the ladder-way was not cased off from the hoisting part of the shaft. The skip track leading from level 2 to the rock house was in a safe condition. In level 2 a drift had been run south 60 feet. At the entrance a pillar of six feet was left for support, and beyond it a stope 30 by 40 feet with a raise of 20 feet had been made ; also a winze extending up to pit No. 2. There is an additional stope west 35 feet and east 40 feet, making a total length of stope of 190 feet, with an average width of 35 feet and a raise of 50 feet. The lode runs east and west with a dip south of 60 degrees. In level 2 a pump is placed near the bottom and is used once a week to prevent the mine from filling with water during the interim of standing idle. An additional rock breaker of 40 tons capacity had been put in place, and also another boiler with a view of being utilized in refining matte, but so far they have not been in use. Instructions were given to have the large open pits at the recent place of working and an open pit near the roadway, as well as all other open cuts or pits, securely fenced around to protect them from danger.

Operations at the Mine.

During the suspension of work on the Inez mine Mr. R. P. Travers will carry on operations for the Trill Mining Company at several other places. A property three miles west of the Inez, on lot 7 in the first concession of Trill, has been opened and a good wagon road made up to the mine. The deposit, which is large, lies at the base of a cliff which rises about 150 feet. Five hundred tons of good grade ore has been taken out and about $1,200 expended in the development. The ore will be hauled in the winter to the company's smelter for treatment. Mr. Travers has taken an option from William McVittie of Whitefish and another party on lots 3, 4 and 5 in the first concession of Creighton, and work has begun on lot 3, which is eight miles north from Whitefish station, C. P. R. The day previous to my visit he had taken in a 12 h. p. boiler with appendages for running a steam drill. Ten men were sent out to place the machinery and put all in running order, when the force would be increased. About $1,000 had been expended in developing the property by the previous owners.

Other operations of the Company.

Canadian Copper Co's Mines.

The Copper Cliff mine was inspected August 5, when about 100 hands were employed as miners and at outside work, and about 160 tons of ore was mined daily. Work was being done on levels 7, 8, 9, 10 and 11, all of which were examined and the following measurements made : New work in level 7 was made by a stope in the northwest part 78 feet in length, 23 in width and a raise of 50 feet. The workings extend in length to the boundary of the ore. A large space of good ground remained to be stoped near the floor of the level. Two drills are being worked in the level. Since last measurements in level 8 stoping has been extended 60 feet in length with a raise of 32 feet. The total of stoping at date is 260 feet in length, 59 in width and 60 feet raise. Two drills were running on an understope at the floor, and an opening had been made to level 9 of 20 by 30 feet. No addition to the boundary of level 9 has been made since last entry. All ore stoped at date in level 8 passes to this level and is raised therefrom to the rock house. The entire stope in level 10 since last entry in the Inspector's book is new work. The stope is 200 feet in length, 25 in width and 50 feet raise. Three drills were running in this level. The shaft had been sunk an additional 38 feet, making a total of 65 feet between levels 10 and 11 at the same incline, 77½ degrees. The shaft was down 27 feet below the floor of level 11, and a pentice was ready to sink to level 12. A drift extended southerly from the shaft in the 11th level 92 feet to the ore body. At the intersection a stope in the ore was made 71 feet long, 23 wide and a raise of 32 feet. A winze between

Workings in the Copper Cliff Mine.

levels 10 and 11 was required to give ventilation to this part of the mine and for convenience of working. Three drills were in use in this level. Captain Davis writes of recent date: "We have been taking out floors at some points since you were here, but have done no drifting. The shaft has been sunk additional 21 feet, making a total below the floor of level 11 of 48 feet. Also a winze has been sunk 45 feet from level 11, and a winze is being sunk in the northwest end of level 8. Only a small force is being worked on the mine."

Records of Scaling.

A thorough system of scaling and examining the mine as to its safety is adopted. A book is kept at each mine and entries are made at the local offices of the scaling done, stating the names of the persons doing the work, time employed, places in the mine and condition of each place when scaled, and entries are required to be attested by the captain. This precaution is taken in addition to the scaling done by each party of miners as the work proceeds. On the examination of the book I found the following entries made of time occupied: May, 205 days; June, 106 days; July, 79 days. This system has been adopted since the latter part of 1896.

Work at the Smelting Furnaces.

August 9 was occupied in going over the outside works at Copper Cliff. At this date three smelters were running, treating about 250 tons of ore in 24 hours. The additional smelter had been started about the middle of July and would be continued until the 1st of October. The auxiliary furnace had been permanently placed and could be run at any time without delay in putting it up. A new horizontal blower had just arrived from Connersville, Indiana, and as the foundations were prepared it would be put in place at once. It is of sufficient capacity to supply one and one-half of the furnaces. The engine connected with it is 16 by 18 inches and about 50 h.p. The capacity of the blower is 67 cubic feet of air for each revolution, and its speed is 90 revolutions per minute. The cost laid down was $2,600. A mill has been introduced for making briquettes by mixing the fine dust from chambers of the furnaces (which carry about 5½ per cent. nickel) with 8 per cent. of lime. By the mixture there is less waste than in the treatment of the dust alone, which has been found impracticable. A large quantity of dust had accumulated, but as the process was found too slow and expensive it was discontinued. Changes may be made to bring it into utility. The matte from the furnace ranges from 37 to 41 per cent. of nickel and copper, being 17 of the former and 23 of the latter. Frequent shipments leave but a small quantity on hand at the smelters. Five additional ore bins had been placed in the rock house. About 400 workmen are employed by the Company in addition to the force on the roast yard.

Work in the Roast Yard.

The roast yard was in a satisfactory condition; no accidents have occurred during the year. Mr. D. L. McKinnon and Partners are the contractors for roasting the ore and delivering it at the smelters. To avoid accidents the company has included the following provisions in the contract, viz: All blasting of the ore heaps is required to be done by the contractor or foreman of the yard, and signals are required to be blown giving timely notice of firing the blast. A sufficient quantity of cold ore must be kept on hand to supply the smelters, and work in removing roast heaps must be confined to three at any one time, so that sufficient time may elapse for roasting and cooling the others. The explosives are required to be safely stored 500 yards distant from the works. There were from 70 to 80 hands employed by the contractors at this date, and about 45,000 tons of ore was in process of roasting. Thirty-two heaps were on the yard, varying from 700 to 4,000 tons each, and requiring from six weeks to six months to finish. No roasting is done in winter; the ore however is taken from the heaps to the smelters throughout the entire year. The manager says in a late communication: "Under D. L. McKinnon and his co-partners the work of the roast yard has been performed in a safe, practical and highly satisfactory manner to date."

Opening up new ground.

On the bluff a quarter of a mile northwest of Copper Cliff, at a point designated as Jones mine in last report, considerable amount of work has been done. One shaft has been sunk 32 feet, following

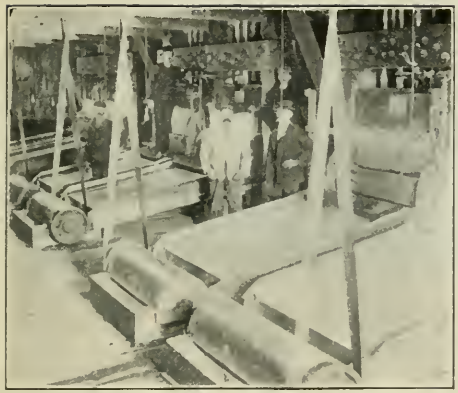
a well defined foot wall three sides being in ore. This is known as McArthur No. 1. From the workings about 400 tons of ore have been taken out. Three men were working in the shaft at the date of my visit, but for most of the season ten men were employed. The ore runs identical with the Copper Cliff in percentage and character, but is perhaps more silicious. The work will be continued to determine the extent of the ore body, and if it proves to be of sufficient quantity a railway track will be laid up to it and the ore taken to the smelters for treatment. A good wagon road is built up to the workings. The captain states that the shaft was down 50 feet at the close of the year. The manager writes on same date: "We have nearly finished the instalment of a small hoisting plant, viz., a small hoisting engine and boiler and a 3-drill compressor and rock house, but can do nothing more until spring. At the other point of working, known as McArthur No. 2, only a limited amount of work has been done since last reported."

Accident at Copper Cliff Mine.

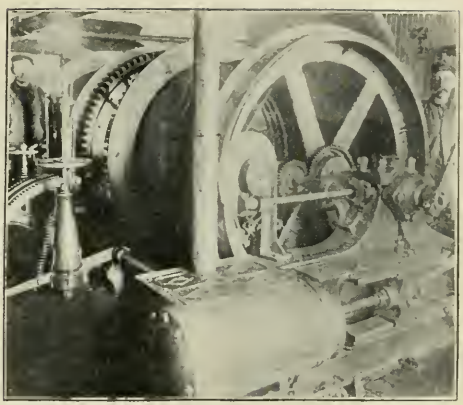
An accident occurred in the ninth level of the Copper Cliff mine on August 9, by the falling of a piece of rock about a foot across and a few inches wide, upon one of the hands, Vick Mickie, a Finlander, aged about twenty years. One of his legs was broken near the ankle and the hip injured. He was in the act of shovelling ore into the tram-car when injured. I had spent the day in examining the outside works at the mine and was about to leave when the report of the accident came in. Immediately I made investigations as to the cause of it, and found that the accident happened at the south end of the level, where an opening had been made through the roof to the eighth level of about 20 by 30 feet. I had gone over this place of working but a few days previous. At the time two drills were working on understopes, and the ore was passing down through the opening to the floor of level 9, from which it was hoisted to the rock house. All was then apparently in a safe condition. The foreman, Mr. Harris, informed me that this region from which the rock fell had been scaled the night previous to the accident by four men, and was considered free from danger. The falling piece of rock was covered with dirt, which would indicate that it had not been newly broken. The circumstances were such that blame could not be attached to the management. The day following I called on the injured man at the hospital, to which he had been removed, and found him recovering from the shock. The physician did not regard his injury as serious.

Workings at the Stobie Mine.

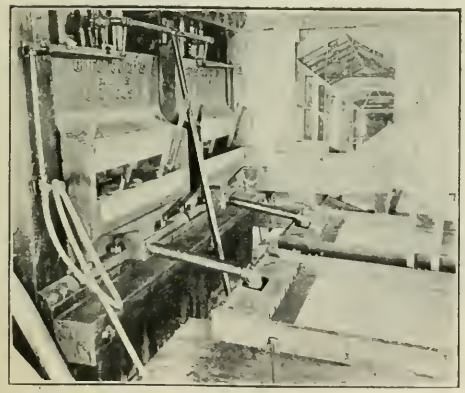
Captain Davies accompanied me through the Stobie mine July 6, at which date 80 hands were employed. About 180 tons of ore were mined daily and sent over by cars to the roast beds near Copper Cliff after being crushed. Additional work since last entry had been done in level 1, or open pit, by a large stope beginning near the floor at the north end and extending 69 feet in length, 46 feet in width, with a slope upwards to within 20 feet of the surface. From this point an opening of six feet square has been made to the surface and a ladder placed leading down to the stope. This opening forms a convenient way for going in and out of the mine and affords free ventilation. The stope has been extended down to level 2, and the stoped ore falls to the floor of this level, whence it is trammed to the shaft and raised to the rock house. In the south part of the open pit an understope has been made to open through to level 2, 53 by 54 feet. In level 2 north of the shaft the stope extends 100 feet in length, 40 in width and raised 60 feet. South of the shaft it is 84 feet in length, 45 in width and 60 feet of raise, making additional since last entry of 84 feet in length, nine in width and 20 in raise. The total extent of stope in the level is 184 feet in length, 45 in width and 60 raise. The shaft has been sunk 65 feet to level 3 at an angle of 65 degrees west. A winze has been opened between the two levels. A stope 23 by 66 feet with 23 feet raise and an incline 69 by 25 feet has been made in the level. The captain informs me in a recent letter that no additional drifting has been done and stoping had been continued in the places of work at the time of my last visit; also that the shaft was put down 20 feet and a winze is being sunk from



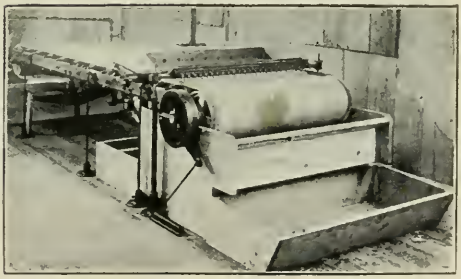
New Mill of Sultana Mine. Showing front view of batteries, amalgam plates and mercury traps, p. 47.



New Hoister of Sultana Mine, p. 47.



Keewatin Reduction Works. Front view of two of the batteries showing gyrating amalgam plates, etc. Passage leading to crushing room in background, p. 62.



New gyrating vanner of Keewatin Reduction Works, p. 61

Sawbill shaft and blacksmith's shop, p. 63.

Ore dump at Sawbill Mine, p. 63.

Mouth of the shaft, Sawbill Mine, p. 64.

Gold mill at Sawbill Mine, p. 63.

No. 3 level. He adds, "We expect to be ready for a large force in the spring." Hoisting ore was discontinued on December 24.

An addition had been built to the changing house and a new cable put on the hoist. The following is a copy of instructions given to the captain by the general manager, regarding the work of scaling in the mine: "Each foreman in charge of the work of scaling will enter in his book provided for the purpose, the day and date as well as the location and whereabouts of all scaling done in each mine; the names of the men engaged in such work will also be inserted. You will then check or O. K. the same before it is entered in the yearly book, a copy of which will be kept in each mine office. The supply clerk will copy into the yearly book a complete record of the scaling work done, as well as supply a copy for the general office for insertion in the general book, which will be kept there for general reference. The supply clerk after entering will carefully compare to see that the copies made are correct. This will also provide against loss of any copy by fire, etc." I carefully examined the books of record and found that close attention had been given to the instructions. The mine and work outside were apparently in a good condition. Instructions previously given about fencing the open pit, etc., had been properly carried out.

Records of Scaling Work.

No mining has been done on the Evans mine during the past year, but the manager states that work may be resumed in the spring.

Evans Mine.

Iron and Iron Mining

Early in August the Hamilton blast furnace was visited and Mr. Hobson, secretary-treasurer of the company, accompanied me over the works, which at that date were in full operation, treating 125 tons of ore per day and employing 125 hands for day and night shifts. The works were running in complete order. Only a small proportion of the ore used was from the Canadian mines, the principal part being obtained from mines on the south shore of lake Superior.

Hamilton Blast Furnace.

Mr. John Milne, president of the Hamilton Iron Mining Company, informed me that the company had been formed principally of the parties connected with the furnace, and for the purpose of opening up iron mines in Ontario. Operations had been carried on by opening a property at Desberats, a station five miles west of Bruce Mines, on the Sault Ste. Marie branch of the C.P.R. One mile west of the station a test shaft has been sunk 16 feet and 10 tons of 60 per cent. hematite ore taken out. Another mine three and a half miles west of the station has been opened, where a shaft has been put down 21 feet; at 15 feet the ore ran 50 per cent. and at the bottom 60 per cent. At 500 feet south of the railway track a shaft has been sunk 30 feet in a vein 20 feet wide of lean ore. Another shaft has been sunk 60 or 70 yards north of the track to the depth of 27 feet in similar grade of ore. Work was begun in February last and continued to July 1 with from 15 to 20 men. About 1,000 tons of ore has been taken out and a few tons of it have been brought down to the smelter. Work was suspended pending negotiations for a diamond drill to determine the extent and value of the ore deposits. The company has obtained options on 2,600 acres in the locality, extending to the townships of Coffin and Thompson. A gang of men has been sent out to a property at Little Current, Manatoulin, where a discovery had been made and some work previously done. Mr. Milne states that the surface indications are excellant, and that there is a very large deposit of ore. The workings are only 30 feet from the shore, and by use of a derrick the ore can be loaded from the mine on to a boat.

Hamilton Iron Mining Company.

About a year ago Mr. D. E. K. Stewart and Mr. Charles Miller opened a hematite mine (worked on royalty) on lot 9 in the fourteenth concession of Huntington, about a mile south-west of Madoc village. Three hundred tons of ore were shipped to the Hamilton iron furnace which proved satisfactory as to purity and quality. At the date of my visit, September 3, this property was being worked on option by Mr. G. A. Longnecker of Pennsylvania. One shaft has been sunk 25

Properties in Hastings county.

feet and sinking was being continued. A short distance south another shaft had been sunk in the old pit 45 feet and neatly cribbed to the bottom with two-inch hemlock plank. Five men were employed and a quantity of ore was on hand.

Mica Mines.

A mica property four miles out from Edgington station on the Ottawa, Arnprior and Parry Sound Railway, has been opened; the vein is said to be from four to 16 feet wide and has been followed 400 yards. It is being worked by the Virginia Mining Co. of Toronto, who have recently purchased the property from Messrs. Armstrong & Matchett, the former owners. Several men are working on the property, blasting and taking out mica and constructing buildings at the mine.

Virginia Mining Company.

Mr. J. E. Chown writes under date of October 12 that he had done during the year some mining of mica for Webster & Co. of Ottawa, on the Canton mine in South Burgess. A pit 12 by 20 feet and 30 feet deep was sunk 200 feet south of the old pit, from which fifteen tons of mica were taken, with a good body yet remaining. Mining ceased owing to the inflow of water, but the company claims it will be worked again in the spring. Four test pits were sunk from six to 10 feet in depth on the property.

Canton Mine in South Burgess.

On lot 10 in the eighth concession of Loughboro, Mr. Chown sunk a pit to a depth of 60 feet, eight feet wide and 30 long, from which eight tons were taken, but as the vein was narrowing and the rock becoming very hard, the work was discontinued. A pit was also sunk on lot 6 in the same concession, but with poor results, only about one ton of mica was obtained. Some work was done on lot 7 in the tenth concession, as well as on a property near Buck lake.

Working in Loughboro township.

Actinolite Mines.

Early in September a visit was made to the actinolite property of Mr. Joseph James at Actinolite (formerly Bridgewater), which comprises lot 7 in the first concession of Kaladar and lot 4 in the seventh concession of Elzevir, 300 acres. One main opening has been made in each lot, and the material is quarried by blasting. These properties have been worked for 15 years past at intervals, and up to date between 5,000 and 6,000 tons have been mined and taken to the mill. The cost of mining as stated by Mr. James is less than 25 cents per ton. Teaming, milling and preparing for market make the total cost about $2 per ton. About 400 tons of the product is disposed of annually in various markets, chiefly in Montreal, Winnipeg and the United States, the duty to the latter country being 20 per cent. It is usually sold at $9 to $10 per ton in car lots f.o.b., the Grand Trunk Railway having laid a branch track from Madoc to the mill. The prepared actinolite is used exclusively for roofing and has the appearance of mastic asphalt when laid but is claimed to be superior to it.

Properties in Kaladar and Elzevir.

The old Warren Tool Factory buildings have been utilized for milling purposes, which are situated on the Scootamata river, a tributary of the Moira, with ample water power. Two Leffel water wheels affording 100 h.p. are in use, which drive one ore breaker, one pulverizer of the owner's design and a separator. The finer part of the material, which is reduced to about 60-mesh, is put into sacks of 100-lb. for the market, and the coarser part is returned to the pulverizer to be re-treated. A small proportion of waste mica is fed by hand into the pulverizer when in operation, as a mixture with the actinolite to increase the bond. The capacity of the mill is 3,000 lb. per hour. About 400 tons of crude material were on hand ready for treatment.

Milling the Rock.

On lots 12 and 13 on the first concession of Kaladar an actinolite property has been opened by Mr. A. M. Chisholm of New York city. Work was begun early in the year by a few men who opened up the deposit, but was suspended early in September.

Stone Quarries.

The Gibson stone quarry is situated six miles south of the town of Madoc, at Crookston station on the Belleville and Madoc line

of railway, 1¼ miles east of Ivanhoe. The property is composed of 14 acres in the township of Huntington. This quarry had been worked for several years at intervals by the former owners, Messrs. Broadigan and Co., but has recently become the property of William Gibson, M.P., who has been working it since April with a considerable force of workmen. At the date of my visit (September 6) there was employed 59 stone cutters, 28 quarry men, 20 laborers, five derrick men, three steam-hoist men, one for boiler and locomotive, six for drills, two for horse powers, four for carts, one tool carrier, two water carriers, one carpenter, four blacksmiths and helpers and two loading cars, making a total of 138 men. The machinery in use consisted of a boiler and locomotive, five derricks, three steam hoists, three steam drills, two horse powers and four carts.

Gibson's quarry at Crookston station.

The ledge is of large extent and an area of 500 feet long and 50 feet wide had been worked over to a depth in places of 20 feet. The quarry can be worked throughout the year. The rock consists of gray limestone, some portions of which are very hard. The rock was being shipped to various places for bridges, culverts and other stone work. Some of it was sent out in the rough, but a considerable part was cut on the ground. About ten car loads were shipped daily, the principal part going to Montreal for the Victoria bridge. Mr. George W. Blake is the general manager at the quarry.

About 200 yards south of the Gibson quarry, and just across the Tweed public road, a property of 28 acres is owned by the Crookston Point Ann Co. The company is composed of H. Quinlan, S. H. Phippen and A. W. Robinson, all formerly of Belleville. Work had been commenced by the present company only two weeks previous to my visit. A force of 40 men, which was being daily increased, was employed, 13 of whom were stone dressers. The other men were engaged in quarrying and general work. A railway side track was being laid into the quarry. Four carloads of stone dressed and prepared according to plans and specifications were shipped daily to the new Soulanges canal at Cascade Point, St. Lawrence river. There was in use at the quarry a steam power hoist, four horse power hoists, three derricks and four carts, with other necessary appliances; blasting was done only by one competent miner. Crookston is situated on the railway line and has a population of about 300, the men being chiefly employed in the quarries.

Crookston Point Ann Company.

Gypsum Mines.

Work had been suspended on the Paris plaster mine during the summer, but was resumed about the middle of November with a force of three men, and at the time of my visit (December 8) from four to five tons of plaster were taken out daily. The drift had been well fitted up to near the place of working, about 30 feet from the entrance. During the time the mine had been lying idle a large space of the roof at the former place of working had broken down, and the present work consists partly in removing rock near the breast of the plaster layer by opening a space sufficiently wide for a tramway and conveyance for working. I found the roof to be insecurely stayed and gave instructions to have several additional timber supports placed under the dangerous part, and also to construct a stone abutment near the point where the work was being done of not less than 10 feet in length, and that as work was pushed forward firm pillars should be left or substantial rock walls built up to make the mine secure. The general manager, Mr. J. M. Wheeler, has informed me that these instructions have been carried out and the mine made safe.

The Paris Mine.

A force of six to twelve hands is employed at the mill and office. There is an increased demand for the products, especially for calcined plaster. About 12 tons were ground daily for land purposes, and the demand has increased materially. Shipments of alabastine are regularly made to Australia, where it is favorably received for tinting the walls and ceilings of houses. The chief market however is in Canada.

A thousand tons of ore was being shipped in from the Excelsior mine near Cayuga for calcining and alabastine. The Paris ore being mixed with slate is used exclusively as a fertilizer.

The Excelsior mine was visited in September and had just been refitted for work. Mr. John A. Nelles, who has charge, stated that mining of ore would be resumed immediately, and 2,000 tons taken out and shipped to Paris under contract. The plaster is of good quality and is used chiefly for calcining and alabastine. No important changes had been made since last report, and the mine was in a safe and workable condition. An area of about one acre of the layer of plaster has been removed, and it is estimated that 35 acres are still remaining.

The Excelsior Mine.

Late in the year when I visited the Martindale mine it was lying idle. Work had been suspended since early in the spring. The Garland mine had not been worked during the year.

Michipicoton Mining Division

By David G. Boyd, Inspector

I HAVE the honor herewith to present to you my first annual report on the newly created Michipicoton Mining Division.

Under the supervision of the Director of the Bureau of Mines the party left Toronto on September 18, 1897, for Sault Ste. Marie, where the steamer Telegram took us to Michipicoton river, arriving there on the 22nd. There is an Indian settlement a mile up the river, and a deserted Hudson's Bay Company's post, the main building of which we were able to secure and adapt it for the purposes of an office and a dwelling. The office was opened for the transaction of business on the 23rd of September, and was so continued until the close of navigation on the 1st of November, when the Telegram made her last trip.

Toronto to Michipicoton.

During this period there were 133 miner's licenses issued, and 170 notices of mining claims registered and filed in the local office at Michipicoton. The total number of licenses issued relating to this new territory was 250, of which 117 were issued from the Bureau of Mines in Toronto before the office was opened at Michipicoton. The total number of mining claims staked and recorded was 225, of which 55 were registered at the Bureau of Mines in Toronto after the office at Michipicoton had been closed. There are 70 licensees who have not as yet filed any claims. With this exception all the other 250 have filed claims. The amount of money forwarded to the Treasury Department from the office at Michipicoton was $1,242, and the amount received at Toronto was $1,779, making a total of $3,021. Of this amount $2,500 was received for mining licenses, $450 for additional mining claims filed by licensees who had already filed one claim on their license, and the balance of $71 is composed of fees for transfer of claims, affidavits, etc.

Issue of Mining Licenses.

The location of the first discovery of gold, known as Y103, is situate on the south shore of lake Wawa, and in consequence of this the prospectors began examining the surrounding country from that point, with the result that the greater number of claims staked are situate south of lake Wawa. About 25 claims are located north of the lake, 11 on lake Manitouwick, eight on Dog lake, three on Hawk river, and one is located about two miles east of Brulé harbour. Six claims for water lots have been staked in lake Wawa.

Prospecting the Division and staking out Claims.

Traces of gold in this territory were first discovered about the middle of June, 1897, and it was two months later before any considerable number of people went in to investigate the country. For this reason there was little time or opportunity for doing work on their claims. The prospectors came in on one trip of the boat, stayed long enough to locate and register a claim, and went away, there being no place to procure provisions or tools to work. On this account there is nothing worthy of being reported as to the progress made in development.

During the present winter a gang of eight men are developing two claims of the Great Northern Mining Co., namely the Jubilee and Dandy. Three men are also engaged in stripping veins and thoroughly prospecting properties held by the Gold Fields Co. of Michipicoton, Limited. These are the only operations that are going on during this winter, so far as I have learned.

Development work in progress.

Appended is a list of the persons to whom licenses have been issued during the year, together with their place of residence and the number of the mining claim (if any) staked out by each licensee. Where not otherwise indicated, the licensees are residents of Ontario.

List of Licensees in 1897.

Name.	Residence.	No. of license.	No. of claim.
Aitkin, D. A	Sault Ste. Marie, Mich	86	*84
Allan, R. J	Chapleau	48	
Allan, W. G	Perth	99	175
Amey, C. I	New Edinburgh	43	*85, 87
Andrews, C	Sault Ste. Marie, Mich	317	*121
Andrews, O. L	Binghampton, N. Y	347	114
André, George	Michipicoton Post	370	73
Armstrong, W. J	Guelph	114	201
Bailey, C. W	Oscoda, Mich	310	13
Ball, H. G	Niagara	414	127
Baluss, H	Wayne, Mich	301	40
Bannerman, A	Ottawa	66	
Barnhisel, J. C	Sault Ste. Marie, Mich	363	95
Barnum, H	Binghampton, N. Y	413	130
Barton, J	Sault Ste. Marie, Mich	434	188
Barton, S	Sault Ste. Marie	410	
Belleau, E	Levis, Que	104	
Belleau, I. N	"	103	
Bennett, G. N	Melbourne	60	
Biron, S	Sault Ste. Marie	314	*189, 207
Bishop, T	"	341	*22
Blackinton, A. D	Detour, Mich	374	148
Black, J. F	Montreal, Que	422	166, 167
Blakely, E. A	Missanabie	91	
Blue, W	Toronto	390	
Bonewell, G. F	Chapleau	46	
Bork, W. H	Toledo, Ohio	334	
Bossineau, J	Sault Ste. Marie	315	
Boyd, J. C	"	365	93, 208, 209
Boyd, W. S	"	398	*106
Boyer, B	"	357	68
Brown, A	"	346	113
Burt, T	Chapleau	45	
Bush, C	Hamilton	113	
Caley, C. W	Sault Ste. Marie, Mich	96	
Campbell, A. D	Sudbury	24	
Campbell, K	London, England	94	96
Carrick, F. J	Sudbury	23	132
Carrier, S. N	Levis, Que	105	
Chapin, F. B	Sudbury	95	186
Chapman, W. C	Akron, Ohio	1	
Charles, J. L	Perth	84	196
Charles, J. H	"	98	198
Chisholm, G	Sault Ste. Marie	381	131
Chittenden, S	Paterson, N. J	419½	154, *215, *217, 219, 222
Clarke, C. G	Sault Ste. Marie, Mich	356	67
Clark, D	Palmerston	396	80
Clark, E. D	Guelph	107	200
Clark, H	St. Paul, Minn	400	119
Comerford, J	Municing, Mich	405	143
Conly, L. H	Sault Ste. Marie, Mich	57	*63
Cook, C	Sault Ste. Marie	65	192, 193, 194
Cowen, F. M	Flushing, Ohio	391	90
Cracknell, A. B	Sault Ste. Marie, Mich	40	*61

Name.	Residence.	No. of license.	No. of claim.
Cross, A. D	Port Colborne	8	
Currie, J. A	Toronto	6	8, 12, 30
Cusack, M	Marquette, Mich	411	111
Davidson, J	Ottawa	79	*45, *124
Dentinger, A	Gatesville, Mich	354	31
Dion, J. J. T	Fall River, Mass	321	*50
Dillon, J	Schreiber	14	
Dingnam, N. J	Palmerston	395	78, 79
Doherty, R. J	Toronto	320	*138
Douglas, S	Sault Ste. Marie	108	228
Douglas, P	London, Eng	361	*108, 204, 205, 227
Dowrie, R	Guelph	331	23
Dreany, A	North Bay	359	*107, 210
Dreany, H	"	382	211
Drew, T. F	Paterson, New Jersey	420	*185, *216, *218, 220, 221 224, 225
Dubray, A	Montreal	87	
Dumond, S	Sault Ste. Marie, Mich	34	19
Dunn, J	Sault Ste. Marie	408	
Eccles, G. H	Sault Ste. Marie, Mich	311	100, 141
Edey, M. C	Ottawa	75	*46
Edey, R. W	"	77	83
Emory, W. J. H	Toronto	70	
Evans, A	Melbourne	82	135
Falconer, P	Sault Ste. Marie	307	*15
Fenton, F. A	Toronto	4	11, 48
Ferguson, C. M	North Bay	64	
Ferguson, R. G	Sault Ste. Marie, Mich	37	*41, *59
Fitzgerald, T	Pine City, Minn	304	115
Flanagan, J	Sault Ste. Marie	329	*103
Foster, A. B	Sault Ste. Marie, Mich	406	145
Fournier, H. A	Missanabie	32	
Frank, J. G	Brantford	17	
Ganley, James	Sault Ste. Marie	28	*206
Ganley, Joseph	"	53	156
Ganley, T	"	319	155
Gardiner, F	Toronto	338	*123
Gemmell, L. J	Perth	85	197
Gillies, J	Carleton Place	92	176
Gillies, H	"	93	177
Gilmore, S. M	Toledo, Ohio	333	54, 199
Gobbins, J. P	Missanabie	50	
Goetz, A	Sault Ste. Marie, Mich	55	36
Goetz, Mrs. A	"	56	35
Goetz, Annie	Detour, Mich	419*a*	*184
Goetz, G	"	352	33
Goetz, J	"	318	34
Goetz, P	Sault Ste. Marie, Mich	54	32
Goetz, A	Gatesville, Mich	387	69
Goold, A. H. W	Brantford	18	
Gordon, G. S	Missanabie	51	
Gould, W. E	Onondaga, Mich	372	159
Graham, W. M	Sault Ste. Marie	308	16
Grant, F. D	Port Arthur	72	
Gray, S. H	Rockland, N.Y	431	153

Name.	Residence.	No. of license.	No. of claim.
Halliday, J.	Chapleau	74	
Hamilton, W. E.	Montreal	120	
Harvey, A	Chapleau	26	
Hobson, A. B.	Flushing, Ohio	392	91
Hobson, W. C	Bartlett, Ohio	350	76
Hodgson, W. F.	Algonac, Mich	302	39
Hogg, J.	Guelph	339	
Holding, R.	Chapleau	25	
Hopkins, H. J.	Pleasantville, Penn	378	99
Horovsky, E	Duquesne, Penn	313	2
Hotchkiss, F. W	Sault Ste. Marie	30	77
Howland, C. H.	Cuyahoga Falls, Ohio	9	
Hudson, A.	Ottawa	69	
Hursley, C. F.	Sault Ste. Marie, Mich	407	*120
Hursley, Jay	" " "	35	43, *58
Husson, W.	Guelph	106	202, *203
Hyman, J. W.	London	340	21, 25
Jelley, J	Webbwood	412	*126
Johnson, T.	North Bay	360	140, 214
Johnston, Jessie A	Chicago	401	117
Johnston, J. F	Chapleau	44	
Johnston, J. H.	Sault Ste. Marie	326	*26
Johnston, T.	"	325	27
Jones, A. S	Passaic, New Jersey	428	161
Jones, S. H	Cleveland, Ohio	337	110
Kearns, J. J	Palmerston	397	81
Kenny, T.	Ottawa	67	89
Kimball, Hattie	Sault Ste. Marie	394	
Kimball, W.	"	322	158
Kimball, W., jr.	"	393	157
Kinshor, A.	Michipicoten Post	73	137
Kiteley, T.	Toronto	7	9
Koppel, L	New York, N.Y.	389	
Kronk, J. F	Akron, Ohio	3	
Lauzon, A	Sault Ste. Marie	328	75
Lawlor, J. H.	"	327	38
Layle, D.	" Mich.	404	*122
Legard, J.	Michipicoten Post	305	109
Legge, C.	Elgin	409	129
Legge, J	Gananoque	345	128
Lemieux, J. B.	Sault Ste Marie, Mich.	316	*55
Lewis, A. E	Milford, Penn.	384	178
Lewis, E.	Summit	97	
Lewis, G	Milford, Penn.	29	1, 179
Lockwood, J	Melbourne	80	134
Lockwood, W. M.	"	81	136
Losie, T.	Sault Ste Marie, Mich.	59	20, *42
Loucks, F. M.	Oil City, Penn.	377	*105
Lunan, W. A.	Thornbury	15	
Many, E. E.	Horton, N.Y.	421	152
Martin, H. G.	Sault Ste. Marie	342	*52
Matheson, A	Nipigon	22	
Michael, G. L	Sault Ste. Marie, Mich	344	65
Miles, D. P.	Huntingdon, Indiana	323	*104
Miller, J. B.	Sault Ste. Marie	349	172, *181, *182

Name.	Residence.	No. of license.	No. of claim.
Moltke, F.	Ottawa	416	
Montague, J. W.	Sault Ste. Marie	388	
Moran, C.	" Mich	418	151
Moran, D.	" "	111	*190
Moran, P.	" "	353	71
Moran, Mrs. P	" "	355	70
Morgan, J	Cleveland, O	430	164
Newsome, J. E.	Port Arthur	71	
O'Brien, W.	Sault Ste. Marie	116	
Macdonald, N	Sault Ste. Marie	385	101
McCoy, G	St. Catharines	90	174
McEwan, A.	Bruce Mines	424	147
McGillivray, W.	Ottawa	76	*44
McGregor, D.	Sault Ste. Marie, Mich	36	*64
McHardy, J. A.	Guelph	332	24
McKay, A. A.	Sault Ste. Marie	383	139, 212, 213
McKenzie, A.	"	309	*51
McKenzie, A.	Kincardine	380	*17
McKimm, U. H	Pembroke	423	168, 169
McLaren, A.	Chapleau	27	
McLaren, J.	Ottawa	68	*86, 88
McTavish, J. W.	Sault Ste. Marie, Mich	41	*56
McVeigh, P	Missanabie	33	
Paris, T.	Sudbury	20	
Parks, G. F.	St. Catharines	89	173
Penny, H. L	Montreal, Que	119	
Perrault, P. E.	Quebec, Que	373	74
Pixley, O. C.	Akron, Ohio	376	72
Price, F. G.	Sault Ste. Marie, Mich	38	*57
Pringle, W. R.	Missanabie	52	
Pruden, A.	Paterson, N.J	427	162
Quigley, G. B.	Bowling Green, Ohio	109	195
Rae, T. C	Biscotasing	117	
Rains, H. D.	Sault Ste. Marie, Mich	42	*62
Rayner, E.	Ottawa	415	*150
Reynolds, F. R.	Patterson, N. J	335	28
Reynolds, C.	"	426	160
Richardson, W	Little Gros Cap, L. Superior	402	118
Richardson, J.	" "	403	116
Rielly, J	Sudbury	19	
Rogers, G. H.	Ottawa	78	*47, *125
Ross, S. P.	Missanabie	16	
Roth, F	Cleveland, Ohio	432	
Rouleau, J	Sault Ste. Marie, Mich	366	94
Russell, G. H	Chapleau	47	
Sayers, H	Sault Ste. Marie	358	66, 223
Sayer, J.	Garden River	312	3
Schellin, T. J	Michipicoten Post	303	*82
Schuttpelz, H	Cleveland, Ohio	369	146
Scott, A. M	Woodstock	101	
Scranton, G. G.	Sault Ste. Marie, Mich	39	60
Seddon, W. D.	Paterson, N. J	336	37
Seip, G	Allentown, Penn	31	

Name.	Residence.	No of license.	No. of claim.
Shirley, L. H.	Montreal, Que.	88	
Simpson, G. A	Sault Ste. Marie, Mich	379	142, 187
Sinn, C. F	Arnprior	118	
Sliney, J	Ironwood, Mich	13	
Sloat, F. J. J	Akron, Ohio	2	
Smith, R. H	Sault Ste. Marie, Mich	429	144
Suett, W	Missanabie	49	
Supe, O	Sault Ste. Marie, Mich	48	18, *170
Taylor, E. J	Toronto	5	10
Thomas, H	Cuyahoga Falls, Ohio	10	
Tisdale, D	Simcoe	362	92
Tisdale, W. E	"	115	
Tolson, J. H	Melbourne	83	133
Tough, W	Sudbury	21	
Trembley, J	Toledo, Ohio	351	49
Turner, Jemima	Sault Ste. Marie	330	*29
Turner, W	"	306	*14
Turgeon, A	Levis, Que	102	
Totten, J. W	New York, N.Y.	425	163
Urquhart, J	Ironwood, Mich	11	
Urquhart, J. H	Ironbelt "	12	
Ward, L. M	Pleasantville, Penn	324	98
Wardman, P	Saginaw, Mich	110	191
White, Mrs. E. C	Sault Ste. Marie	112	*183
White, F	"	343	*53
White, J	"	348	171, *180
Wight, J	"	433	226
Wilfing, F. J	Sault Ste. Marie, Mich	371	102
Williams, J. D	Ottawa	417	149
Willson, T. L	St. Catharines	100	
Wissüan, M	Michipicoton Post	399	112
Woehler, H. C	Akron, Ohio	375	97
Wylie, W. H	Sault Ste. Marie	435	
Yaunkin, F.	Jackson, Mich	386	

Claims marked with a star (*) are in dispute.

MICHIPICOTON
MINING
DIVISION
ONTARIO
LAKE SUPERIOR
MICHIGAN
Pic R.
85°
84°
48°30'
C. P. R.
MISSANABIE
MAGPIE RIVER
MANITOWKELL
Otter Cove
Pt. Harr.
Mica Bay
WAWAL.
48°
N.B.Co Post
MICHIPICOTON R.
Little Gros Cap
Michipicoton Bay
Brule Pt.
MICHIPICOTON I.
P.L.S. Herrick's line
C. Gargantua
47°36'
47°30'
Leach
Lizard
Caribou I.
Montreal I.
Montreal R.
Pt aux Mines
Mica Bay
Mamainse Pt.
Coppermine Pt.
Batchewana R.
1880
Batchewana Bay
Whitefish Pt.
Goulais Bay
Gros Cap
SAULT STE MARIE

REPORT OF

THE BUREAU OF MINES

VOLUME VII SECOND PART

1898

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Seventh Report of

The Bureau of Mines

SECOND PART

To the Honorable JOHN M. GIBSON, Commissioner of Crown Lands :

SIR,—I have the honor to present herewith for publication Part II of the Seventh Report of the Bureau of Mines, comprising—

1. Fourth Report on the West Ontario Gold Region. By Dr A. P. Coleman.
2. Notes on the Petrology of Ontario. By Dr. A. P. Coleman.
3. Clastic Huronian Rocks of Western Ontario. By Dr. A. P. Coleman.
4. Geology of Base and Meridian Lines in Rainy River District, with Map. By William A. Parks, B.A.
5. Michipicoton Mining Division, with Map. By Prof. Arthur B. Willmott.

In accordance with your instructions, statistics of the metalliferous mines and works of the Province have been collected for the three months ending March 31 of the current year, which are given in the following table together with the statistics of the year 1897 :

	1898 3 mos.	1897 12 mos.
Gold :		
Ore treated.....net tons	13,939	27,589
Gold product..... oz.	5,288	11,412
Value of gold ..... $	86,175	190,244
Silver :		
Ore treated.....net tons	35	
Silver product ..... oz.	9,750	none.
Value of silver ..... $	5,287	
Nickel and copper :		
Ore smelted .....net tons	28,008[1]	96,094
Matte product..... "	5,236	14,034
Nickel in matte..... "	652	1,999
Copper in matte ..... "	1,202	2,750
Value of nickel ..... $	119,910	359,651
Value of copper..... "	75,369	200,067
Iron ore .....net tons	5,203½	2,763
Value at mines ..... $	9,488	4,689
Pig iron :		
Ontario ores .....net tons	4,298	2,770
Foreign ores..... "	15,814	34,722
Mill cinder, etc ..... "	2,157	5,350
Pig iron product ..... "	12,927	24,011
Value of pig iron ..... $	155,126	288,128

[1] Incomplete.

Summarised by values, the statistics of the first three months of the current year and of the twelve months of last year are as follows :

Gold	$86,175	$190,244
Silver	5,287	
Nickel	119,910	359,651
Copper	75,369	200,067
Iron ore	9,488	4,689
Pig iron	155,126	288,128
Totals	451,355	1,042,779

Comparing the production by percentages, it is found that the value of the gold product in the three months of 1898 is 50½ per cent. of the 12 months product of 1897 ; of nickel, 33⅓ per cent. ; of copper, 37⅔ per cent. ; of iron ore, 202⅓ per cent. ; of pig iron, 54 per cent. ; and of all metals and ores, 43 per cent. These rates if maintained throughout 1898 should result in nearly doubling the values of 1897.

I have the honor to be, Sir,
Your Obedient Servant,
ARCHIBALD BLUE,
Director.

Office of the Bureau of Mines,
Toronto, 28 May, 1898.

Fourth Report on the West Ontario Gold Region

By Dr. A. P. Coleman

Introduction

IN ACCORDANCE with the instructions of Mr. Archibald Blue, Director of the Bureau of Mines, the work of examining and reporting upon the gold mining region of Western Ontario was continued during the past summer. Prof. Arthur B. Willmott of McMaster University was once more appointed assistant, and his services have proved increasingly valuable.

As the present writer had been made one of the secretaries of the Geological Section of the British Association for the Advancement of Science, and the meetings were held in Toronto on August 18 and following days, it was necessary to begin the season's work as early as possible in order to finish before the middle of August, in time to prepare for the meeting.

Accordingly a start was made from Toronto on May 31, accompanying Mr. Blue, who had business in the west. After attending the mining convention then in session at Rat Portage, including visits to various mines of the region, work was begun on the east shore of the Lake of the Woods. All the mines on which any work was being done were examined and a careful survey was made of the Grande Presqu'ile, which had hitherto been unexplored geologically. Here numerous lakes and some small areas of Huronian were mapped. The Camp Bay and Shoal Lake districts were then visited, completing the work on the Lake of the Woods.

On July 2 Wabigoon was reached, and on the following days properties in Van Horne township and on Upper Manitou were examined ; after which we proceeded by canoe up Little Wabigoon river to Long lake and then down Turtle river to Bad Vermilion and Shoal lakes. After examining the mines of this region, we ascended the Seine to Sawbill lake and finally came out at Savanne on July 22.

Returning east Professor Willmott and I parted, dividing up a number of points of interest on the way to Sudbury, which was reached on July 28.

The rest of our time was employed in examining gold and other mines in that district. Lake Wahnapitae and other smaller lakes to the east were traversed, and afterwards the anthraxolite deposits and some nickel and gold properties to the west of Sudbury were visited. On August 8 we returned to Toronto.

During the western part of our work Mr. J A. Bow, recently appointed Inspector of Mines for the west of the Province, accompanied us ; and the party visited every mine on which work was being done.

My acknowledgments are due to the many prospectors, miners and managers of mines who rendered us valuable aid during the summer, and always received us with great hospitality. As on previous occasions, mention must be made of the admirable maps furnished by the Geological Survey of Canada and of their reports, both indispensable to geologists working in the region.

In the following report Professor Willmott's share in the work will be given in his own words and signed ' W.'

Locations near Rat Portage

Though we arrived at Rat Portage on June 3, the mining convention with its excursions occupied us for the first three days. On June 8 the Scramble mine was examined,

showing considerable advance since the previous year.[1] The most important shaft was down 60 feet with a dip of 80° to the northwest, and a crosscut of 65 feet had been made at the 50-foot level. As mentioned last year, the mine is on a wide fahlband with some quartz. The strike is N. 15° E., and the width at some points is 35 feet. Near the bottom of the shaft more or less solid quartz comes in, sometimes five feet wide. That the mica schist of the fahlband carries free gold was proved by many panningS, some of them very good.

Scramble Mine.

Close to the fahlband a bed of quartzite or sandstone four feet wide shows itself, very like rock of Couchiching age near Fort Frances. The country rock on the hills for half a mile to the northwest is agglomerate with large rounded pale green masses enclosed in a darker base, sometimes interrupted by rounded ridges of greenstone of the ordinary kind. We found that the boundary of Huronian and Laurentian lies nearly a mile too far to the northwest on Lawson's map, running through the property of the El Diver and Black Sturgeon mines to the outlet of Island lake into Black Sturgeon lake.

Just south of the Huronian boundary and east of the Scramble mine is the Royal mine, in gray granite. Here there are stringers and masses of quartz near a schistose band having a strike of N. 65°. Two openings have been made, one to the depth of 23 feet, showing quartz containing some free gold.

Royal Mine.

An ore in gray granite.

The Caribou mine is on a small mass of quartz in Huronian agglomerate. A tiny stamp mill, mainly built of wood in imitation of larger mills, was put up here by the man in charge some time ago. The stamps consist of a wooden rod shod with an iron plate and weighted with a stone. There were three stamps with three flat granite boulders as mortars in a log trough as mortar box. The mill was worked by a hand crank, and is said to have produced a small amount of gold.

Caribou Mine.

At the Black Sturgeon mine we found a nine by 15-ft. shaft sunk about 30 feet through ash-gray boulder clay and a little way into the rock. There was only a small amount of quartz on the dump, and part of it had the look of sandstone, like the band at the Scramble mine, of which this deposit is supposed to be a continuation.

Black Sturgeon Mine.

The Princess mine, north of the El Diver, is considered to be on the same fahlband. The rock is green hornblende schist with some dike-like bands of granite. There was not much pyritous schist on the dump, but some rusty, good-looking quartz. The shaft was 24 feet deep, the upper part timbered. We were told that the rock the full width of the shaft assayed from $6 to $12.60 per ton, and that the quartz can be traced across the valley some hundreds of yards. The pyritous schist does not seem as extensive here as at the Scramble, and as it is less micaceous, and a stretch of drift-covered country separates the two mines, there may be some doubt whether it is really the same band of schist. At the time of our visit six men were employed, Mr. John Collins being foreman. Three houses had been put up, cooking and sleeping camps and office, and about two acres cleared. The hilltop near the shaft gives a splendid view of unburnt hilly country with Black Sturgeon lake away below.

Princess Mine.

The Elsie mine also is regarded as being on a part of the same fahlband. Here we find green schist charged with pyrites, but not so micaceous as at the Scramble mine. The strike is 55° or 60° at the shaft. Quartz with tourmaline occurs with the schist on the dump. Two other small openings show quartz, one part quartzitic or sandstone like. Nine men were employed here under Mr. L. Adams as foreman, the mine being managed by Mr. Ahn.

Elsie Mine.

The finding of a band of sandstone or quartzite more or less thick at all these properties is very suggestive of continuity, but the character of the schist charged with pyrites seems to vary from location to location. If they prove to be all on the same fahlband as the Scramble mine, with ore of even a low grade, we shall have a very interesting and important addition to the gold deposits of the region. It is to be hoped that the Scramble mine will soon be thoroughly tested, since the ore it contains may not prove as free milling as the other

A probably extensive fahlband:

[1] Bur. Mines Report, 1896, p. 108.

ores of Western Ontario, and therefore may require different treatment. The amount of ore in this fahlband is so great as to permit of its being worked on a very large and hence economical scale.

Huronian and Laurentian boundaries.

Prof. Willmott was instructed to go on horseback to determine the boundaries of Huronian and Laurentian southwest of the Scramble mine, and reports as follows: 'On the road to the Scramble we had failed to see the strip of gneiss laid down on the map, and had certainly found a contact of Huronian and Laurentian rocks along a line about one mile south of that shown on the map. There seemed a probability that the granite area south of Cedar lake was an enclosed boss, and this I found to be the case. Travelling along the railroad track I first reached the granite about a quarter of a mile past mileboard 137, and left it at the same distance beyond board 138. The country on both sides of the track is a swampy plain, with a few protruding hummocks of red granite. To the south of the track the map seems to be correct. To the north I found green schists on the east and north of the swamp which is marked as Cedar lake. The latter, if it exists, is very much smaller than it is represented on the map. W.'

On Lake of the Woods

Having engaged Thomas McDonald as guide and canoeman and Alfred McCall as cook, we set out on June 10 to visit the mines on Lake of the Woods. Mr. Bow accompanied us, so that a third canoe was necessary, and Mr. Moore came with us as a volunteer.

Big Stone Bay Region.

Hay Island Mine.

Entering Big Stone bay, we stopped first at Hay island, where the Hay Island Gold Mining Company had eight men at work with John Kenty as manager. They were sinking a shaft near the shore to strike a vein once reached by a shaft 30 feet deep, now flooded by the permanent raising of the level of the lake. Bedded veins crop out on the hillside inland, rather narrow, but said to pan gold. The quartz from one vein contains many slender prisms of mispickel, one of the few instances of arsenical ore in the region. Camping at the old Winnipeg Consolidated mine, we visited the properties within reach. To expedite matters we divided our party, Professor Willmott taking one set of mines and I another.

Medicine Ledge location.

The Medicine Ledge property is at the mouth of Blindfold lake, in reddish coarse granite. A vein of white quartz with some pyrites is said to have been traced 1,800 feet with a strike of N. 10° W. Where work was being done it averaged about six feet wide, but narrowed to two or three feet at the bottom of the shaft, which was 38 feet deep on an incline of about 45°. The hanging wall was well defined, but the foot wall was somewhat broken up. William Kirkley, who had contracted to sink 60 feet on the shaft, had seven men at work.

Master Jack Mine.

The Master Jack mine, some distance up Blindfold lake, we found shut down and in charge of a prospector who served as guide. The vein of white or reddish quartz runs N. 20° E. through granite, generally red, sometimes greatly decayed along the quartz. The body of quartz as seen in the upper part of the shaft is wide, and 100 yards to the south the prospector showed us that the vein contained two or three feet of good looking quartz. The shaft, almost full of water, was said to be 110 feet deep, with drifts amounting to 100 feet. There are three log houses, a shaft house and stables.

Dominion Gold Company's locations.

Professor Willmott reports as follows on the properties of the Dominion Gold Mining and Reduction Company of London, Eng.: 'From the Winnipeg Consolidated I followed a fair road for a mile and a half to the Gold Hill mine. Mr. A. Kingsmill, who was in charge, informed me that this and other properties in the vicinity are owned by the Dominion Gold Mining and Reduction Company of London, England. These properties comprise 1,200 acres, and openings have been made at the Gold Hill, Black Jack, Combination, Golden Slipper, Bull Dog and other veins. At present only five men are employed and these are prospecting the property. There was a probability of the old shaft at the Gold Hill,

now down 125 feet, being sunk deeper. At the Black Jack work was carried on during the winter. The shaft was deepened to 90 feet and a drift was lengthened until it is now 150 feet. The stamp mill at the Gold Hill is at present used only for testing. The ore of the Golden Gate, an adjoining property, is also being tested here. The mill is on Islet lake, not on Gold lake as shown on the geological map.

'The Combination vein at the southwest angle of Islet lake was being tested when I visited the property. The quartz is six to 12 inches wide, with a very quartzose green schist on either side, making a band two and a half to four feet thick. It has been stripped for 100 feet and is said to have been traced for a quarter of a mile. The quartz carried no visible gold at the surface, but a few feet down it showed considerable.

'A good road leads west from the Gold Hill to the Golden Gate, a distance of half a mile.

Golden Gate Mine. This property, consisting of 193 acres, is owned by Mr. W. A. Laycock. Fourteen veins have been discovered and test pits sunk on several. The main shaft was being sunk vigorously. At the time of my visit it was 60 feet deep, and a drift had been run for 20 feet. The vein runs about 45° in hornblendic schist, which becomes chloritic towards the bottom of the shaft. Tests made at the Gold Hill stamp mill proved satisfactory. Mr. Laycock described one of his veins as containing native silver and gold, galena, blende, pyrolusite and several copper sulphides. Assays of this gives $4 to $5, mainly silver. W.'

There is a striking difference in appearance between the relatively large and distinct veins with rather glassy quartz in the granite (Laurentian) on Big Stone bay and the narrow, irregular bedded veins and quartzitic stringers in the adjoining green Huronian schists.

Near Andrew Bay.

A good road about three miles long leads northeast from the end of Andrew bay over

Jenny Leigh Mine. fairly dry ground to the Jenny Leigh mine (S140), near the contact between Laurentian and Huronian. The vein appears to be traceable several hundred yards, nearly north and south, with a width of two or two and a half feet of quartz where uncovered. Two shafts have been sunk upon it, both nearly full of water at the time of my visit. The northern shaft is in gray granite; the southern appears to be in greenstone. The quartz in the first shaft narrows as it goes down, but may widen beneath the water. The quartz on the dump looks well. The mine is provided with suitable log camps, made use of by men working on neighboring properties since the Jenny Leigh has shut down.

The Stella and Contact mines were taken by Prof. Willmott. 'Three-quarters of a mile

Stella and Contact Mines. east of the Jenny Leigh is the main shaft of the Contact mine. The property is owned by the Ontario Prospecting, Mining and Developing Company of Rat Portage; capital, $1,000,000; President, A. M. Robertson, Keewatin. The company own in this locality S87, 113 acres; S86, 40 acres; JO114, 40 acres; JO115, 25 acres; JO116, 160 acres. Mr. Neil Campbell, the discoverer of the Contact and Stella veins on S87 and S86 respectively, is managing the development. At the time 10 men were employed, but the force was to be increased. The main shaft is near the shore of a lake, on a considerable hill. It was sunk 22 feet. The vein is much broken and the quartz is rather sparingly distributed through the schist. Mr. Campbell says that he has traced the vein for one and a half miles, always near the Contact, sometimes on it. On the east side of the property drifting is being done on the face of a cliff. A lens of quartz 12 feet in depth is here exposed, but at the bottom of the cut it disappears. The thickest part is 12 or 15 inches. W.'

On the way to Astron bay Bath island was visited, and it was found that the Bath

Bath Island Mine. Island Mining Company of Toronto was carrying on work upon it. A new shaft was being sunk 25 feet west of the old one, and had reached the depth of 48 feet. Owing to a blast having been fired just before my arrival, I was unable to go down the shaft. Mr. A. C. Burgess, assayer at the camp, stated that the value of the quartz was improving as the shaft went down, averaging

$19 or $20 per ton at the bottom; and he showed me some fair specimens of free gold from it.

Camp Bay Region.

Beginning at Astron bay, several days were spent in exploring the almost unknown region of the Grande Presqu'ile, an account of which is given hereafter. Leaving that peninsula at Turtle portage, various properties on Whitefish bay and northward of it were visited.

Between Turtle portage and Camp bay, the east shore of Whitefish bay was followed by Prof. Willmott, who found only Keewatin rocks as far as Last point. To the north of this as far as Snake bay the coast is mainly Laurentian, but at the bottom of nearly every bay Huronian schists are found. The east and south shores of Ataminikie or Grassy bay consist of gneiss, perhaps an enclosed boss of Laurentian. In the last edition of the Geological map of Lake of the Woods the changes suggested by myself last year have been made, so that the contact is shifted west for a mile or two and follows the shore as far north as Ells peninsula.

Properties near Camp Bay.

We found no work going on in the immediate vicinity of Camp bay, and lost some time in scrambling over rough surveyor's lines before finding the Mascotte mine (S79), where we found 12 men at work under Mr. C. P. Kelpin. The vein, which is in weathered greenstone, has a strike of about 120°, dips slightly to the north and is irregular in width, being about a foot wide on top of the hill but widening, it is said, to five feet at the bottom of the shaft, 35 feet deep at the time of our visit. Most of the quartz from the ore pile had been taken to Rat Portage. Some handsome gold specimens were shown us. The region is very hilly, the top of the shaft being 265 feet (aneroid) above Lake of the Woods, while the mouth of an adit run in from the foot of the precipitous hill is about 80 feet lower. The adit had reached a length of 85 feet without yet striking the vein, but probably would soon reach it. The camp consisted of three log houses on the shore of a small lake. There was a large amount of Norway pine on the location.

Mascotte Mine.

The Trojan mine, consisting of locations WA3 and 4 and S77, contains some very large quartz veins. No. 1 vein, running north and south, is in places 12 feet wide. The quartz is white but contains some sulphides, and the adjoining green schist impregnated with sulphides is said to carry gold also. The walls of this vein are not very distinct, and some parts of it have the quartz much mixed with felsite. A parallel vein is about eight feet wide. No. 2 vein, on which most work has been done, also runs north and south, with a dip to the east from the vertical of 21°. There is about two feet of quartz in this vein, which is said to be richer than the larger one; and a shaft had been sunk 54 feet when we were there. Five men were at work on June 23. A hilltop on the property is 495 feet above Lake of the Woods (by aneroid), while the creek on which the camp is placed is only 100, though only a short distance away.

Trojan Mine.

The bold precipitous hills in this neighborhood come the nearest to being mountains of any we have seen in the Lake of the Woods region, and the country is by no means an easy one to traverse.

Regina Bay.

Proceeding to Regina bay, Prof. Willmott examined D264 at the Sioux Narrows, a property owned by the Bertram Engine Co. of Toronto. 'The vein, which runs a little north of west in green schist only a foot away from a mass of granite, is six feet in width of quartz mixed with schist, both well charged with pyrites. It is stated that assays of the ore have yielded from $1.50 to $7.50 per ton. The shaft was down 20 feet, and seven men were at work under W. F. Carlson, while others were expected soon.

Location D264

'A mile east of this are two locations, D224 and D225, owned by T. R. Deacon, F. Caron and DcRosier. On D224 a solid vein of quartz five to seven feet wide has been partially uncovered for one-eighth of a mile. It runs 130° within walls of schist, and sometimes includes a little schist. The quartz is white and shows comparatively little pyrite. The vein crosses a

Locations D224 and 225.

point beyond a small bay on D225, and is said to have been found on an island three-quarters of a mile to the southeast. W.'

Mr. Bow and I visited the Regina mine, which was now under the management of Mr. H. A. Pringle, formerly of West Australia.

Regina Mine.

Not much need be added to last year's general description, except that a small vein, eight inches wide, to the east of the main vein and parallel to it, had been somewhat opened up and had produced some rich ore. Nothing need be said of the mine, which will be described in Mr. Bow's report.

The most interesting change since my last visit was the putting up of a cyanide plant, the first to be installed in our western gold region. In this it was intended to treat both tailings and concentrates. The plant for the treatment of tailings had a capacity of about 600 tons per month, the tailings being conveyed by a centrifugal pump from the mill to the top of the building and drained. It is then treated in vats containing 22 tons, first with a weak cyanide solution (0.08 – 0.1 per cent.) and afterwards with a stronger one (0.2) for six days, after which the sand is washed and discharged into the lake. About a pound of lime is added per ton of tailings to correct acidity ; the consumption of cyanide is 1¼ lb. per ton, and of zinc a quarter of a pound. Two ten-ton vats are used for the concentrates, each taking about five weeks to fill from the product of the vanners. The acidity is corrected as before, and leaching with 0.2 per cent. solution is kept up till the vat is required for a new charge. Very little cyanide is consumed after the first week, and the total consumption is about four pounds per ton. So far 73 per cent. of the gold had been extracted, but it was expected that this could be increased.

The new Cyanide plant.

In December, 1897, Mr. Pringle informed me that the main shaft was down 374 feet, being then the deepest of any gold mine in the Province, and that the size of the vein was increasing as well as the value of the ore per ton.

The Passage Channel.

On the way up from Regina bay Prof. Willmott examined the island just east of the "Passage" between Whitefish and Long bays and found that it is not entirely Keewatin schist as mapped, but contains a boss of granite in the centre of the island having the shape of a Y, some granite appearing also on the west shore of the Passage. He reports that several locations have been taken up on the island. 'To the north of the marshy inlet is D248, owned by Mr. Austen of the H. B. Company, Rat Portage. Two parallel veins of quartz have been found in the granite, bearing 130°, about the general direction of the line of contact. One vein is 12 to 18 inches wide, with the parallel vein 12 inches wide at a distance of 20 feet. Fifty feet to the north the first increases to three feet of quartz with a few granite stringers in it. On the whole the quartz is white and shows little pyrites. Along the shore of the location the granite contains numerous narrow veins of quartz. The granite itself shows little or no schistose structure. To the southeast of this location, on Long Point, the greenstone contains porphyritic crystals of felspar. On the east shore of the Passage a location was taken up by General Wilkinson for asbestos. The mineral occurs in narrow seams filling fissures in the granitic rock close to its contact with the Keewatin schists. In the latter are some pockets of pipestone. Neither mineral seems to be present in workable quantity. W.'

Locations on the Passage Channel.

Bald Indian Bay.

On June 29 the Sultana mine was visited briefly. The new 30-stamp mill was well under way, matters being so arranged that 20 more stamps could be readily added, making 50 in all. The mill was furnished by the Jenckes Machine Co. of Sherbrooke and seemed thoroughly up to the times, several recent improvements being introduced. There were six Frue vanners provided with corrugated belts six feet wide. The new shaft house was being arranged to hoist with skips instead of buckets. The new mill was expected to have a capacity to treat 80 tons per 24 hours. The new chlorination plant had worked well, extracting 86 per cent. of the gold in the concentrates. It is believed that

Sultana Mine.

the percentage of extraction would have been higher if the concentrates had not lain so long in the weather. On the whole things were looking very prosperous at the Sultana, whose proprietor certainly deserves his good fortune.

It may not be amiss to add here some information regarding the underwater extension of the Sultana ore body as obtained from Mr. Burley Smith by Professor Willmott. 'Mr. Smith was kind enough to show me a chart on which was represented the results of the bore holes he had put down off Sultana island in the winter of 1896-7. He succeeded in piercing what was held to be the continuation of the Sultana vein in three different bores. The depth of water was 15 feet, and below that lay two feet of clay. One hole put down at an angle of 55° reached the vein at a depth of 56 feet 9 inches. The vein was here 19 feet thick on the angle, including a horse. A second bore was put down at an angle of 70° and reached the vein at a depth of 77 feet, the vein proving to be 24 feet 8 inches thick on this inclination. A vertical bore reached the vein at a depth of 103 feet 6 inches. The vein was here 36 feet thick, including a horse, but this is of course a greater angular measurement. Mr. Smith expected very shortly to begin the placing of a caisson preliminary to the sinking of a shaft. W.'

Diamond drill explorations.

The Grande Presqu'ile.

One of the most peculiar features of that many-armed body of water, Lake of the Woods, is the number of long peninsulas projecting into it, often with such narrow and low connecting links to the mainland that a rise of water of only a few feet would transform them into islands. The largest of these peninsulas, or *presqu'isles* as the early French voyageurs named them, is naturally the Grande Presqu'ile, 30 miles in length from northwest to southeast by 20 in the other direction, with an area of more than 200 square miles. This large body of land, with its own inlets, lakes and streams, is linked with the eastern shore of Lake of the Woods at Turtle portage by a strip of soil and loose stones rising only a few feet above the water and only a few paces across. At high water a comparatively shallow ditch would turn the Grande Presqu'ile into an island.

Description of the Peninsula.

The shores and inlets of the Grande Presqu'ile are fairly well given on the geological map of Lake of the Woods, but its interior is left a blank, and Lawson notes on its surface: 'The interior of this peninsula has not been explored. So far as access has been had to it, it appears to be composed entirely of coarse textured granitoid gneiss. As will be observed, it is surrounded by hornblendic schists and altered traps, which for the most part dip away from it, the geological structure being that of an immense anticlinal dome.'

Lawson's Note.

Under the circumstances, it seemed advisable to put some time upon the exploration of the Grande Presqu'ile, especially as prospectors were beginning to operate on its shores.

In general we found that Lawson's mapping of the contact of Laurentian and Huronian was very correct, and his supposition as to the interior consisting of granitoid gneiss is in the main borne out by our observations. In character the Grande Presqu'ile is very like the neighboring mainland, having many rocky ridges with muskegs and lakes between, forming with their covering of tangled woods a region to be explored only with time and trouble. Even by hard work one could usually advance only about a mile an hour through the woods.

A difficult tract to explore.

Maud Lake to French Portage

It was decided to make a start in the region of Astron bay on the northwest corner of the peninsula, making excursions inland sufficiently far to be fairly sure of the geology; and then to work around the shores with occasional trips inland until the area had been circumnavigated.

Astron bay is a fjord running southward for more than three miles, with rocky shores affording good exposures. At the entrance to the bay one finds the usual eruptive contact of Laurentian and Huronian, after which only granite or

Excursions from Astron bay.

gneiss is to be seen for about a mile and a half. From this on a coarse grained black hornblendic rock, sometimes diorite-porphyrite, shows itself on the west shore practically to the south end of the bay. This rock is penetrated by dikes of flesh-colored granite, and is often very like the more metamorphosed Huronian schist in contact with the Laurentian. It may however be only a more basic variety of Laurentian. A walk three and a half miles inland from the south end of the bay disclosed several small lakes. The rocks observed were gray, fine grained mica schist, or gneiss and some coarse grained diorite. The schist is exactly like the rocks mapped as Couchiching (lower Huronian) on Rainy lake, and it as well as the dark green rock is penetrated by dikes or turned in places to a breccia. The region traversed was rough, with hills rising more than a hundred feet above Lake of the Woods.

Returning, we went southeast to the winter road, finding in that direction only Laurentian gneiss. A long and crooked lake to the west of the road caused us some inconvenience, necessitating a long detour.

Professor Willmott went southward from Astron bay and reports as follows: 'From the south end of Astron bay I followed the old winter road across the Grande Presqu'ile.

On the Winter Road line.

The rocks on both sides I found to be gray gneiss, with very few dikes such as those at the north end of Astron bay. The road follows the beds of three streams. One, small and very short, flows north. The second, crossing the road about the middle, flows northerly for some distance and then crossing the road again turns off to the northwest. The third flows south for about two miles. The whole road lies in a valley which is a continuation of Astron bay. The highest point on the road is about 100 feet above Lake of the Woods. The southern half of the road is very wet, and becomes impassable at the end of three miles. Extensive hay meadows occur in this part. By scrambling along the hills we were able to reach Sabascosing bay. It took two and a half hours to return the four miles without stop and with no baggage, so that the route is useless as a summer portage. W.'

Maud lake was next examined. This is much like Astron bay, except that a fall of about nine feet separates its waters from those of Lake of the Woods. Its shores are entirely of Laurentian after passing the entrance. I travelled south for fully two miles, but finding only granitoid gneiss turned back. The country is very rough, consisting of high hills with steep walls having swampy valleys filled with windfalls between.

Maud lake.

Professor Willmott went eastward and then north and reports thus: 'From the southern extremity of Maud lake we travelled due east for two miles and a half over well burnt hills and fairly dry muskegs to a small lake about three-eighths of a mile in diameter. The rock traversed was entirely gray gneiss, striking 90° or thereabouts. Returning we kept more to the north until we reached a small lake supposed to be one mile east of the centre of Maud lake. After passing to the south of this lake we turned north to get a nearer view of a moose standing on the shore of an adjoining lake. This lake, a little over a mile in length and quite narrow, runs almost north, though with some slight bends. I have named it Mina lake. We skirted the east shore and rounded the northern end where a small stream flows out. Travelling two miles due west, we reached the portage at the foot of Maud lake. The contact here of the Laurentian and Huronian is correctly laid down on the map. Numerous small quartz lenses were seen, but no large veins. The next day we paddled back to the mouth of the stream supposed to come from Mina lake. It ends in a swamp two miles east of the entrance to Maud lake. It is perhaps worthy of note that on the previous day Mr. Bow noticed evidences of living beavers on the headwaters of this stream. W.'

Mina lake.

Beaver inlet, just west of Astron bay, runs southward in a fjord-like way, roughly parallel to the two previously mentioned bodies of water. Its shores are largely formed of the dark green coarsely crystalline rock found to the west of Astron bay, probably much metamorphosed Huronian rock; some portions however look rather more like a dark syenite. A large creek empties into the south end of the inlet, per-

Beaver inlet.

haps draining one of the lakes previously found.

Passing out of Beaver inlet we coasted westward and southward to the French or Dry portage, where we had agreed that our three canoes should meet. To our surprise we found no portage at the point indicated on the map, but plenty of water for canoe navigation. The rocks to this point are all Huronian, and some quartz veins are seen on the shore, evidently examined by prospectors, since stripping had been done in some cases, and trees blazed.

Rendezvous at French portage.

There is a house and stable at the so-called portage, but we found no inhabitants except a horse, which seemed glad to see human beings. There is here a small stretch of burnt ground, the first observed on the peninsula.

As the cook's canoe did not arrive at the rendezvous, though sent on by a short route, Professor Willmott and I turned back and camped for the night on an island about two miles north of the portage, after paddling hard against a heavy sea, exploring various channels that might have been taken by mistake. We were fortunate enough to get some bread at a house a short distance below the portage, or we should have gone supperless to bed. At dark we made a bonfire to guide the wanderers, who turned up about ten o'clock. They had lost their way and got into an open reach of the lake, where the high sea had swamped them. Almost the whole of our supplies and kitchen equipment were lost; and Mr. Moore and the cook, Alfred McCall, were in the water more than an hour before the canoe drifted near a small island on which they managed to land, chilled and exhausted.

Swamped on the lake.

This is the first serious mishap that has occurred to a Bureau of Mines party, but fortunately resulted in no loss of life. We were however delayed a couple of days through having to send to Rat Portage for fresh supplies and outfit.

On the Tug Channel.

An excursion was made inland from a point near the French portage by Professor Willmott and myself to determine the position of the Laurentian contact, which was evidently incorrect on the geological map. We found it about a mile inland instead of at the shore, a zone of mixed Huronian and Laurentian extending for at least a quarter of a mile farther, dikes being common. There was a doubt as to whether the coarse-grained dioritic rock met with should be classed as Laurentian or not. It resembles that found at the south end of Astron bay, and may be greatly metamorphosed Huronian. Messrs. J. H. Stewart and A. W. Irish have taken up a location just west of Beaver inlet, where a band of schist somewhat like that of the Scramble mine, but with less sulphides, occurs with a width of 22 feet.

Tracing the Laurentian contact east of French portage.

Continuing on our course around the peninsula we went south down the tug channel taken by steamers between Rat Portage and Rainy river. This channel seems to have been carved out of the Huronian, only remnants of the green schists remaining on the shore. The west side is formed by Falcon island, a large island consisting mainly of Laurentian, but with portions of its border Huronian. On the east shore near a long point, turned to an island by high water, Professor Willmott visited Mack 26 and 27, owned by the Bullion Mining Co., Rat Portage, where there is a vein of white quartz five or six feet wide, striking 160°. The vein has been stripped for about 70 feet, but no further development work done.

In Steamboat channel.

Locations Mack 26 and 27.

Kajagogamog Lake Region.

Turning east and skirting the north shore of McPherson island, we followed a narrow channel into the northern end of Sabascosing bay, passing Indian Reserve No. 30 and the deserted agency. From the head of the narrow marshy end of the bay we followed a small stream inland, finding however only Laurentian gneiss for a mile from shore, when we turned round.

Sabascosing bay.

Learning from a camp of Indians that there was a large lake some distance inland, I engaged two young men as guides and set off with two days' provisions to explore it. The portage from a point on Indian reserve 31A and 35A is about two and a half miles long, much of it

Exploring Kahjagogamog lake.

muskeg and very wet. Some of our party walked in, carrying the supplies and my blankets, the two Indians taking their bark canoe. The Indians and I camped without a tent at the western end of the lake, which they called Kah-ja-go-ga-mog (the "j" soft like "sh"). The mosquitoes made the night camp almost unendurable without proper nettings. The lake, which runs east and west, proved to be about nine miles long, but narrow and crooked, with numerous bays and some islands. Laurentian rocks appear on all the shores except at the west end, where a large creek flows to the south with a considerable fall over a small patch of Huronian. When the west end was reached the Indian, who talked a few words of English, said "No more lake," and we soon returned. The land on the shores of the lake is often muskeg and elsewhere forms low hills, sometimes burnt over.

Thompson's creek.

A day or two later we paddled around the southern shore of the peninsula, past Stairway point to the outlet of the creek flowing from lake Kahjagogamog and followed it up to its head. This stream is called Thompson's creek, and was once used to float down logs from the lake above, there being a dam at the foot of the lake to control the water. There are three rapids with a drop of about nine, 18 and 36 feet respectively as determined by aneroid. The creek is very crooked and flows much of the way through meadows with rank marsh hay. It is however easily navigated by canoe. A rather large tributary comes in from the west about half way down, but this proved too crooked and bush-encumbered for canoeing. There were fresh beaver marks along the creek.

Jubilee Mining Company's locations.

On our way round from the reserve we met F. W. Orde and P. B. Sammons of the Jubilee Mining Company, who had four locations along the shore. One near their shanty runs north and south, pinching and widening, across the strike of Huronian rocks. Where somewhat opened up it was about two and a half feet wide and nearly vertical. The quartz contains little pyrites and has rather a quartzitic look. On the eastern location, which we did not see, there is a vein said to be eight to 12 feet wide, running northeast and southwest.

Stairway Point to Turtle Portage.

Rounding Stairway point we found bands or dikes of granitic rock in black cleavable Huronian, with a very low dip, 24° to the southwest.

Miles bay.

Miles bay is a large and confusing body of water, having a complex shore line and many islands, all the shores observed being Laurentian. This part of Lake of the Woods has evidently been mapped only roughly, since we found that only the leading features of the shore could be recognized.

Obabicon bay and lake.

We camped at an isthmus near the head of Obabicon bay, and portaging over the isthmus paddled up the narrow channel into the lake of the same name. We found to our surprise that the current was flowing inwards, probably because of the strong westerly winds. Prof. Willmott took the southern shore and I the northern. The lake is a fine one, and very much more correctly mapped than Miles bay. We found several small patches of Huronian along the river and islands toward the northern end of the lake, and an area of hornblende schist and hornblende porphyrite about half a mile in diameter on the point which projects from the west, cutting off the north end of the lake. A little quartz appears at one point, but is probably not of importance. There are wide stretches of marsh on the northwest corner of the lake.

Professor Willmott reports on the southern part of Obabicon lake as follows: 'Obabicon lake might almost be described as a bay, for in the narrow channel connecting it with Lake of the Woods there is hardly a current. We crossed to the east side of the lake and pushed up the marshy inlet for half a mile to the end of navigation. The rock all the way proved to be gray gneiss. Returning we coasted south for a mile and a half, then crossed to the west shore and coasted to the outlet. Everywhere gneiss was seen, and no indication of quartz or other economic mineral. Many brilliant orange lilies were seen dotting these rather barren shores. W.'

Turtle portage.

On the evening of June 22 we reached Turtle portage, where there are two ruined buildings once occupied as a fishing station. As it was Jubilee day we celebrated the event by a fine bonfire.

On Whitefish Bay.

Owing to loss of time through the swamping of one of our canoes early in our survey of the Grande Presqu'ile, we found that it would be necessary to do the latter part of the work in less detail. Knickerbocker inlet, so named for its curious shape on the map, penetrated farthest into the interior, so that it was decided to examine this carefully and not enter all the other indentations of the shore. While I undertook this work Prof. Willmott occupied himself with the eastern shore of Whitefish bay, into which we had passed by crossing Turtle portage. The whole shore so far as seen was of Laurentian gneiss, sometimes porphyritic, and an excursion half a mile to the west of the head of canoe navigation on the inlet showed only the same rock in a region of sharp hills with heavy windfalls. We saw quartz at only one place on the north shore of the southwestern expansion of the inlet, where someone had blazed a prospect. Here there were several irregular quartz veins having a width of about a foot and a half and a strike of 110°. The quartz did not look promising. An assay showed one pennyweight of gold.

Knickerbocker inlet to Cross inlet.

Along the North Shore.

The Laurentian gneiss continues along the shore almost to the end of Cross inlet, on the north side of the peninsula. Here dark gray porphyrite shows itself. It is very schistose, strikes east and west and dips steeply to the north.

Professor Willmott reports as follows: 'The lower end of Cross inlet I found to consist of Laurentian gneiss as laid down on the map. In the extreme northwest bay I found a band of porphyry about six chains wide and striking 70°. At the end of the bay gneiss was found striking about east and west. This I crossed at right angles for 17 minutes (= ¼ mile) to more quartz porphyry (?) striking 70°. This seemed to be the true contact, and does not differ materially from that laid down on the map. At the northwest angle of the "cross" a similar band of porphyry is met, probably a continuation of that crossing the northwest bay. W.'

Owing to the high water we found that the portage at the head of Cross inlet was under water, so that canoes could be pushed through the reeds without difficulty.

In order to test the accuracy of the Huronian contact mapped on the north side of the peninsula we made short excursions inland, Prof. Willmot south of Quartz island and I southwest of of Beacon island. In the latter excursion the Huronian was found to extend, as mapped, about a third of a mile inland from the small bay which we had entered. The rest of the mile traversed was over gneiss having the same strike as the Huronian schist, about east and west. Steep ridges crossed our path in the same direction, but much of the walking was good, being our old brulé. Two small lakes were found by the way.

Contacts south of Quartz and Beacon islands.

Professor Willmott's excursion is described as follows: 'From a bay due south of the east end of Quartz island, which lies south of Cliff island, I made an excursion inland for one mile. The Keewatin schists I found to be one-quarter of a mile in breadth, including in that a zone penetrated by numerous dikes of granite. The gneiss to the south I crossed for three-quarters of a mile. It is quite schistose, striking 70 to 80°. In the schist is a little agglomerate. The strike of the schists is the same as that of the gneiss. No quartz veins were seen. W.'

Hills, Muskegs and Lakes.

As this concludes our exploration of the Grande Presqu'ile, the results may be summed up in a few words. The geology in the main has been correctly mapped by Lawson, though a few small Huronian patches occur in the Laurentian of the interior. The most promising parts of the peninsula from the economic side are the northwest and southwest corners, where veins of quartz occur in or near the Huronian. Numerous lakes were found in the interior, one nine miles in length; and probably several more exist, though no space wider than four miles was left untouched by us.

Geological and topographical features of the Peninsula.

Only a little of the surface has been burnt over, but the best of the timber has been removed for logs or ties. Along the streams

there are numerous hay marshes, some of which are made use of by Indians or others. With the exception of a few Indians, we found only half a dozen inhabitants on the shores of the whole peninsula. Game appears to be plentiful, our party having seen a moose and numerous tracks of caribou, as well as fresh beaver work at two points. Rabbits, grouse and prairie chicken (so-called) are plentiful.

Only a very small portion of the whole area seems fitted for cultivation, and much of that is included in the two Indian reserves on the southwestern shore. The rest of the country is a wilderness of rocky hills, muskegs and lakes.

Shoal Lake Region

On June 26 our work on and near the Grande Presqu'ile was finished, and after crossing the main channel of Lake of the Woods, Portage Bay and Deadman Portage we entered Shoal lake and steered for the mines near Hell Diver bay.

Mr. Bow and I walked across the portage to Bag bay in order to visit the Mikado mine.

Mikado Mine.

As Mr. Bow reports on the extent of the workings, number of men employed, etc., not much need be added to my report of last year.[2] Since then it had been found that the vein passed into the trap (altered diabase) and became much less refractory than it had been near the surface in the granite, very little bismuthinite occurring on the lower levels. Mr. Breidenbach, the manager, considered the ore about 85 per cent. free milling, with only about half of one per cent. of sulphides in the quartz, as compared with 2¼ per cent. in ore from the open cut. The average width of the vein was about 4½ feet, with somewhat irregular walls, and the value was estimated at from $20 to $25 per ton.

Two kinds of dikes are to be seen at the mine, felsite and also coarse granite, a felsite dike cutting the vein at the main shaft. A second vein 400 feet east of the main vein and parallel to it, running about N. 35° W., was being opened up. It was only about three or four inches wide at the surface, but rich. It had been sunk upon 70 feet, disclosing four feet of vein matter between the walls, assaying, according to Mr. Breidenbach, on the average an ounce per ton. This vein is in altered diabase just northeast of a dike of granite. A felsite dike must occur somewhere below the surface, since much of this rock was to be seen on the dump. The felsite and also the green "protogine" granite from this shaft are said to be auriferous to a slight degree. At the time of our visit the 20-stamp mill and other buildings were well under way; and since then the mill has been operated, apparently giving quite satisfactory results. The buildings at the Mikado have a character of their own quite different from those of other mining camps of the region. They look solid and business-like

No work was going on at the adjoining Cornucopia mine on an island in the bay,

Cornucopia Mine.

owing to difficulties among the owners; since, it is said, satisfactorily adjusted. The property consists of the island, D212 and water-lots on each side, D217 on the east, D216 and 229 on the west. The chief work done consists in the stripping of a number of veins and the sinking of a shaft 110 feet deep. The vein sunk upon is 2½ or three feet wide, including some country rock, but very irregular. The ore is said to be rich, a mill run of 23 or 24 tons at the Rat Portage Reduction Works having yielded $60 or $70 per ton.

Professor Willmott reported on the Yum Yum: 'At the Yum Yum mine on Shoal lake

Yum Yum Mine.

the manager, Mr. J. Burley Smith, gave all the information he could. The property, S94, consists of 64 acres owned by the Yum Yum Gold Mining Company of Ottawa. Capital, $1,000,000; president, John Mather; secretary, A. W. Fraser. So far Mr. Smith has confined himself strictly to exploratory work. A number of veins have been found and the more promising tested with a diamond drill. Mr. Smith is a firm believer in the efficiency of the drill for quickly and economically testing a property. Two drills were at work at the time of my visit. Altogether 1,050 feet of boring had been done on this location with a view of testing the continuity of the ore bodies, and of determining the best location for a sha ft

[2] Bur. Mines, 1896, pp. 105-6-7,

The majority of the veins run northwest and southeast. No. 3 has been traced for half a mile. On the side of a hill an open cut has been made 60 feet long, 25 deep and six to 10 wide. The well-defined walls are of Keewatin rock. A thin section examined under the microscope by Dr. Coleman proved to be altered diabase. A few yards from the entrance to the cut the drill was at work. A bore hole sunk at an angle of 42° struck the quartz 55 feet below the bottom of the cut. Another bore at an angle of 62° was down 150 feet, but had not pierced through the quartz. The cores are of course carefully assayed. No. 5 vein has been traced northwest for half a mile. It has been uncovered at a number of places and has a width varying from 10 feet downwards. The White Show has been traced northwest for half a mile and stripped much of the way. It occurs in a green schist from which many wide stringers come in, some almost at right angles. The G vein runs northeast and dips to the southwest. Three bores have been made here. The Joe vein runs northwest for one-quarter of a mile. Two pits have been sunk to depths of 17 and 20 feet respectively and two bore holes made. This vein shows considerable free gold. A new find was being stripped at the time of my visit. Free gold associated with tourmaline and magnetite occurred here. Twenty men were at work on the property. The buildings, neat trim log ones, are a sleeping camp, dining room, office, assay office store and wharf. Mr. Smith expected to begin the sinking of two shafts at once. The ore is to be shipped to the Keewatin Reduction Company's mill.

'The Bullion Mining Company of Rat Portage owns S105, S106 and S107 on Hell Diver bay, Shoal lake. The Monarch vein on S106 bears a little north of east and is enclosed by Keewatin schists. The quartz is about one foot wide and contains little pyrites. Another vein, parallel to this, was discovered shortly before my visit The quartz was about a foot wide and carried considerable free gold. Two pits each 20 feet deep have been sunk on the property and some stripping done. Seven men were at work prospecting the property.

Monarch Mine.

'Across the bay from the Monarch is the Gold Coin, but I found no one at the camp. I was told by my guide that several veins had been found which carried free gold. One that I visited on the top of a hill was a narrow, irregular band in hornblende schists. A shaft had been sunk some distance, but the bottom was not visible on account of water. A wide band exposed on both walls of the shaft consisted of felsite. In it there was about 3 inches of quartz. W.'

Gold Coin Mine

Manitou-Wabigoon Region

Leaving the Lake of the Woods we reached Wabigoon late on July 1. Here Prof. Willmott and I parted for a time. Wabigoon itself is the newest town in the district, and expects to win the trade of the Manitou to the south as well as of various mines nearer by. Two small steamers ply from the village to the north end of the Manitou road, a distance of perhaps 25 miles, including the numerous bends of the creek followed part of the way.

Wabigoon town.

South of Wabigoon Lake.

I took the Wm. Whyte, which made its way south and then eastward up Wabigoon lake, into Little Wabigoon lake, where the course turned about south-southwest to the mouth of Grassy river. From this on navigation is troublesome, especially in Crooked river where at some of the bends the engine must be stopped and the boat pushed round with poles. Even in high water, as it was on July 2, the propellor was frequently clogged with weeds and had to be reversed to disengage them. Many stones have been removed from the channel by the steamboat owners, but some very troublesome ones remained near the head of the creek before entering Minnehaha lake. Here we went aground, but succeeded in getting off again. Later in the summer the dam on Wabigoon river at Dryden, the outlet of Wabigoon lake, was raised by a force employed by the Government so as to keep the water at as high level as possible, but owing to the dryness of the latter part of the season navigation became very difficult in spite of this improvement.

Steamboat travel on Wabigoon lake.

At the north end of the Government road there was a village of eight or ten tents and two or three shacks, including a store and "hotel." The "town" occupied about five acres, from which the woods had been cut or burnt, and in other directions the woods were unbroken. There was no regular dock, but the small steamer tied up to a precipitous rock which served as a landing place. The Government road, six or seven miles in length, was still under construction, a large force of men being employed in straightening the old trail, grading uneven portions and laying down miles of corduroy over the swampy places. The first wagon passed across the portage while I was there, all stores, etc., having been carried on the back before this time.

The route to Rainy lake.

At the south end of the portage a small village of tents with a log house or two existed, and here a small steamer was under construction to navigate the Manitou. With the completion of this boat, the finishing of a dam south of Pickerel lake to improve navigation on the Manitou chain of lakes, and the making of a road past the rapids between the dam and Manitou sound on Rainy lake, a new and short route to Mine Center will be available. At Wabigoon people expect to see this route in operation next summer, furnishing the quickest and easiest mode of reaching Shoal lake. At Fort Frances and Rat Portage the general opinion seems to be that the route will not compete seriously with the Rainy River route.

Affairs at the north end of lake Manitou were largely at a standstill, waiting in the case of two or three mines until machinery could be brought in over the new road.

Mr. F. W. Guernsey, manager of the Neepawa Gold Mining Co., received me hospitably at their mine near the head of the lake, furnished a canoe and served as guide in my visit to various properties on Upper Manitou. For this I wish to express my thanks; and also to the Hon. Mr. Aylmer for the loan of a canoe on lake Wabigoon.

Owing to the short time at my disposal I was unable to visit the Lower or Big Manitou, and confined my work to the upper lake. Sixteen men were at work on the Jubilee mine (HP 301) under Mr. W. M. Caldwell as superintendent. A shaft was down 62 feet and drifting had been done at the 50-foot level, 30 feet to the north and 38 to the south. The vein is vertical, runs 25° or 30° east of north and seems very continuous. Since my visit I have been informed that this mine has shut down, the ore proving too low grade to be remunerative. This is a disappointment, since last year, before sinking was begun, the vein looked very well. Some quartz taken by myself assays $7 per ton.

Jubilee Mine.

The Victory mine (McA28) of the Neepawa Company is the only other property on which much development has been done on Trafalgar bay at the north end of the lake. Here one shaft has been sunk 46 feet and another 25 feet, while in all 130 feet of drifting has been done. The quartz is at one point 35 feet wide, including some rock. The vein runs about 30°, and is nearly vertical, but has ill defined walls. The ore seems low grade on the whole.

Victory Mine.

The same company is working the Royal Sovereign, HW54 on the Big Manitou, where Niven's 6th meridian touches the lake on the north, and has sunk a shaft 65 feet deep on an incline of 75° to the southeast, the vein, which is wide, running N. 60° E. I was unable to visit this property, which is favorably spoken of.

Royal Sovereign Mine.

The Edna mine, McA29, is supposed to be on an extension of the Victory vein. It is being worked by the Gold Explorer's of Canada, an English company, Mr. Ahn being manager. I found Mr. W. Sharp as foreman in charge of ten men. They had sunk 55 feet with a crosscut of 20 feet. The quartz looked like that of the Victory.

Edna Mine.

The Kishkutena group of locations, including HP366-7-8-9, is owned by Messrs. U. M. Thomas, J. Y. Pratt and B. H. Evans. These locations include bedded veins running 20° in green schist not far from porphyroid. The quartz varies greatly in width, being sometimes 3½ feet wide but generally much narrower, and having usually indistinct walls. Some of the schist is said to pan gold, though not so richas the quartz. A few test pits and

The Kishkutena locations.

some stripping represented all the work done at the time of my visit.

Auriferous porphyry dikes on Lahay bay.

Some time was given to Mosher bay, a body of water projecting eastwards from Manitou straits, a mile or two south of the exit from the Upper Manitou. The southern projection of this bay has been called Lahay bay. On the east side of this sheet of water, on HW167, there is a gold-bearing dike of porphyry half way up a steep hill rising from the water. A very interesting schist conglomerate, like that near the Ferguson and Foley mines on Shoal lake, crops out on top of the hill, having a strike of 30° and vertical dip. The pebbles are of all sizes up to a foot in diameter, and include quartz porphyry, quartzless porphyry, felsite, green schists and quartzites of various colors, some very like sandstone. The pebbles are well rounded.

Location HW170.

At the south end of Lahay bay, near Moonshine lake, on HW170, there is another auriferous dike of porphyry, running 60°, not quite parallel to the strike of the schists. Cross veins of good looking quartz carry some free gold. Two beautiful lakes, named Moonshine and Sunshine, each about two miles long, empty into the bay over Harrison falls, forming at the time I visited it a considerable waterpower with a drop of about 20 feet.

Location HW74.

On Mosher bay Leullier and Gasse have taken up location HW74, near the east end of the bay, where a bedded vein with no regular walls runs near a hilltop with a strike of about 65°. The quartz with some rusty schist, all containing more or less gold, is seven or eight feet wide and retains the same character to the bottom of a pit 24 feet deep sunk upon it. The ore pans well and affords some rich specimens of free gold. Some ore taken by myself assays $6 per ton. Other specimens contain free gold and would go much higher. Mr. Paul Gasse says that the granite shows itself about half a mile to the east of the workings.

Location HW66.

HW66 across the bay shows a thick but irregular quartz vein in protogine, or a rock closely like it. This location has been named the Big Dick, and is owned by Messrs. Carroll and Paul.

Six trout from four to ten pounds in weight were caught on this expedition by loading the troll with spikes so as to sink near the bottom. The smaller fish had yellow flesh; the larger ones were salmon tinted.

Other locations on the Manitou lakes.

Owing to lack of time other properties were not visited, though a number are reported to be worthy of attention. The "Swede Boys" are stated to have sunk 40 feet on HP259, an island in Upper Manitou, and to have found ore rich in free gold. Mr. Blum on HW144 is said to have a shaft down 35 or 40 feet; and there are shafts on AL211 and 212, two islands on Manitou straits, said to have produced rich ore.

It is to be hoped, now that a passable wagon road and steamers give easy entrance to the Manitou, some of these properties will be developed and become paying mines. Hitherto access has been difficult in summer, but that drawback will no longer stand in the way. Many rich specimens have come from the Manitou, but up to the present the ore deposits appear to be pockety, so that it is very desirable that some of the larger deposits should be thoroughly tested.

East of Wabigoon Lake.

Raleigh.

While I was at the Manitou Prof. Willmott examined other parts of the region. 'Going east from Rat Portage on the evening train to Taché, we put up for the night with the section-men. In the morning we went with them on the hand-car to the end of their section, five miles to the east, and then walked a half mile further where we met the Raleigh section-men. Mr. Joseph Montalhitti, the foreman, told me that there was little prospecting along his section of the road at present. Two and a half miles east of Raleigh a pit had been sunk on a vein in slate (?) for 15 feet. Assays gave $7 in gold. Three and a half miles west of Raleigh and one mile south of the track, a shaft had been sunk at the Black Fox but nothing further was known.

Tache.

'Taché, 250 miles east of Winnipeg, is situated on a sand plain surrounded by granite rocks. The Little Wabigoon river crosses the track at this point. It is here quite large enough for canoes, but too

rapid. To the south of the pumping plant it has excavated a channel 16 to 20 feet deep in the sand and fine gravel of the plain. To the north of the track the material has been used for ballast. No stratification was observed and no jasper pebbles could be found.

'The granitoid gneiss extends east from Taché to mile-board 254 without change. It is here distinctly gneissic and gray in color. Eastwards it becomes darker and encloses fragments of the green schists. Just east of 254 is a dry muskeg underlaid with well-rounded gravel, in which was found a small piece of jasper.

'The green schists begin a half mile east of mile-board 254, and are said to extend a mile and a half east of Butler, that is for 16 miles. Mr. F. J. Belleau, a prospector met at Taché, is authority for this latter statement. The schists are mostly massive in appearance, and strike about 120°. An occasional dike of felsite was seen in them. A quarter of a mile to the east of the contact there is a narrow band of hornblende gneiss included in the schist. Several gashes of quartz were seen in the vicinity of the contact and close to the railway. One was noticed which was six feet wide and 20 long.

A belt of green schists.

'A number of locations have been taken up along this contact, among them 75P, which surrounds mile-board 254. It consists of 160 acres, owned by Wm. W. Baby and R. W. Jameson, M.P. The quartz occurs in a sheared zone bearing 20°, enclosed in gray gneiss. It has been stripped for about one-eighth of a mile from where it crosses the track to where it passes under a swamp. At many places along the strike there is no quartz, nor even the semblance of a vein. At other points the quartz seems to be at right angles to the strike and is then 18 to 25 feet wide. The quartz is frequently five to 10 feet wide except at these gashes, where it widens out and then fails entirely. The wall also is poorly defined.

Location 75P.

'At the extreme east a very narrow band of green schist is included in the gneiss, and the quartz forms a series of lenses in this and is much narrower than to the west. The quartz on the whole is very white and contains little mineral matter. Mr. Baby informed me that he had assays running from a trace to $56.

'Mr. Brown, a prospector of Taché, is said to have found good specimens of free gold to the south of the station. He was away, and so nothing further was learned of it. To the west of Taché there is much stratified sand. About three miles east of Bois Brulé the granitoid gneiss ends, and is followed by the Keewatin schists as far as Wabigoon.

Around Dinorwic and Wabigoon.

'Two miles from Dinorwic on the shore of Wabigoon lake is a property known as the Big Ruby mine, consisting of two locations, HW125 and 126, making 80 acres in all. The owners are Thomas Partington, C. T. Brown, L. S. Vaughan, A. McLaren and T. H. Schofield. Mr. Brown was personally superintending the development work at the time of my visit. A short distance from the lake the main shaft was being sunk in chlorite schist and at the time was 30 feet deep. The vein, which is a bedded one, consists of a mixture of quartz and slate about six feet in width. Near the bottom of the shaft two feet of solid quartz was visible on the wall, but this mass may be much wider as it was not all exposed. There is considerable iron pyrites in the quartz. Assays ran, it was said, from $18 to $1,480. Mr. Brown stated that an assay of slate and quartz taken right across the shaft yielded $7 to the ton. Near the shore of the lake a similar bedded vein has been sunk on for a few feet. The quartz is here more mixed with schist. Small grains of native copper are found on the location.

Big Ruby Mine.

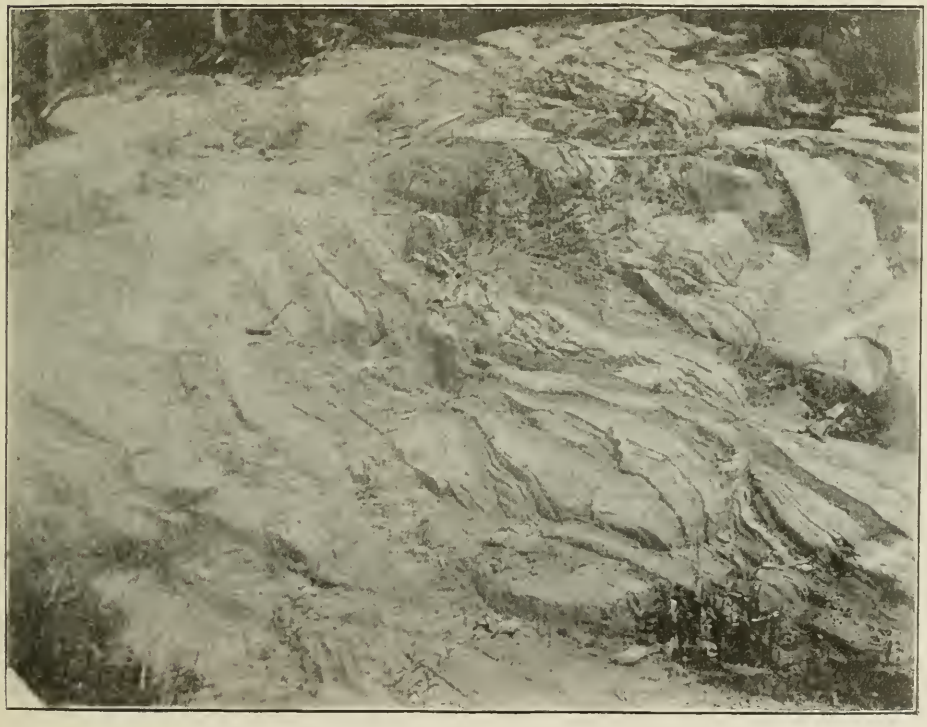
'At Dinorwic Mr. Vaughan, proprietor of the Dinorwic House, stated that there were eight or 10 prospecting camps to the north, around Sandy and Minnetakie lakes. He was interested in one property on which they were beginning to sink. Mr. Mills of the same place showed specimens of gold-bearing quartz from the same region.

Prospecting north of Dinorwic.

'One mile and a quarter northeast of Wabigoon is the Northern Queen mine. A good trail leads out to it over a plain very promising agriculturally. The property was recently purchased by the Rand Gold Mining Company of Wabigoon. Horace Crawford of Winnipeg is president and Wil

Northern Queen Mine.

Kakabeka Falls in 1848. From Agassiz's 'Lake Superior.'



Structure of Gneiss rock at Wahnapitae. Photograph by Willmott.

On Lake Matagamashing.

Crystal stamp mill and old shaft house.

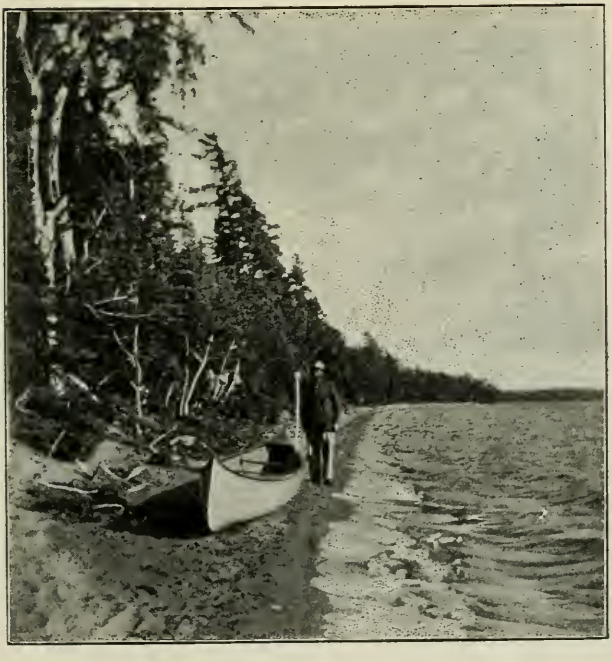
Photographs by Willmott.

Camp at Crystal Gold Mine. Photograph by Willmott.

Abram's Rapids. Photograph by Parks

Below Pelican Falls. Photograph by Parks.

Leaving camp on Pelican Lake. Photograph by Parks.



Sand beach on Vermilion Lake. Photograph by Parks.

River crossed by line above Lake 58. Photograph by Parks.

View from hill above Lake 58. Photograph by Parks.

iam Cowan of Brandon vice-president. The property at this point consists of four locations, HW130, 131, 132, 135. At the time when the property was visited the shaft was full of water, all work having ceased pending the transfer. It has been sunk on a fahlband running east and west in the Keewatin schists. The band is well oxidized on the surface, and to the west of the shaft is easily traced by its red color. On this side little quartz is seen. At the shaft a stringer of quartz comes in from the north. Farther to the east the quantity of quartz in the band increases considerably. A pit 200 feet to the east shows a vein of solid quartz four feet wide. The dump at the main shaft is largely quartz and mineral matter. Chalcopyrite tarnished brown on the surface is by far the most common sulphide, but pyrite, marcasite and limonite are also present. Arsenopyrite is said to occur also, but I did not find any sample of it. W.'

Van Horne Township.

Most of Van Horne township is covered with lacustrine deposits of stratified clay affording good soil, as may be seen in the vicinity of the thriving new town of Dryden, where the Wabigoon river has two falls and is crossed by the Canadian Pacific railway. The southwest corner of the township is rocky however, Huronian schists coming to the surface, and a number of mining locations have been taken up, both in Van Horne and the township of Aubrey just to the west. Rock shows itself at the falls in the town itself, where a dike of tourmaline granite crossed by quartz stringers rises above the soil at the site of the dam put in to raise the level of the Wabigoon chain of waters.

Deposits of stratified clay.

The best mode of access to the mining properties of the township is to go south by canoe up the winding, sluggish river, navigable by small steamers, then west on an arm of the lake, and once more south either by canoe on a narrow, tortuous creek or on foot by a well beaten path through the woods.

Mining properties in Van Horne.

On lot 10 of the first concession many small veins and stringers of quartz, often mixed with a carbonate and tourmaline, occur in green schist, sometimes running parallel to the strike, at others crossing it. Much of this quartz looks well, but none of the veins seen are large enough to be of importance unless quite rich. On the same lot there is a dike of dark red felsite, the Little Jumbo, 18 feet wide and containing some stringers of quartz, running through a greenish gray agglomerate. Part of the felsite has been sheared into a dark spotted schist, and the latter is said to assay on the average $14 per ton. A specimen taken by us assayed, to my surprise, 1 oz. per ton, but may not represent the average rock. The ordinary felsite seems to carry little or no gold, and the small amount of quartz to be seen is not rich. A shaft has been sunk here to the depth of 55 feet with 20 feet of a cross cut. It is a very singular ore deposit, nothing except the small amount of pyrite in the dark schist suggesting its auriferous character.

Little Jumbo Mine.

Not far off we saw the Lone Jack mine, consisting also of a red felsite dike with cross stringers of quartz, said to pan well

Lone Jack Mine.

Lot 11 in the first concession is owned by the Grimsby Gold Mining Co., which owns also five locations on Lake of the Woods and two on Eagle lake, a few miles west of Van Horne township. Mr. J. A. Livingstone is manager, and Mr. John Kerman was acting manager at the time of our visit. We found here a shaft 36 feet deep on a vein of quartz averaging 2½ feet in width, said to have been traced for half a mile. The vein runs 12° north of east and dips somewhat to the north. The walls are not very distinct. Portions of the quartz are heavily charged with pyrite, and the rock is said to assay $7.50 per ton on the average, the gold contents increasing as they go down.

Grimsby Gold Mining Company.

On lot 9 in the second concession, belonging to Mr. R. A. Hutchison, we saw a vein eight or 10 inches wide, running east and west and dipping about 45° to the north. The quartz contains tourmaline and large amounts of sulphides, pyrite, galena and zincblende.

The six assays made in the laboratory of the School of Science from ores obtained by

myself in Van Horne township run from 50 cents to $20 per ton, and average $5.25. One specimen given me and stated to come from the region contained 4 oz. 10 dwt. per ton, but was evidently a picked sample.

Route to Turtle River

On July 6 we set out for Shoal lake, via Little Wabigoon river and Turtle river.

The trip southward to Shoal lake.

Owing to the facts that Mr. Bow was to accompany us and that our two canoes would accommodate only four persons with the requisite outfit, we went with only one man as cook and canoeman, Alfred McCall. Mr. Bow took the bow paddle in my canoe. None of us had been over the route before, but with directions from Thomas McDonald, our former canoeman, who had been part way over the ground, and the aid of maps, very imperfect for the first half of the journey, we found our course with little difficulty. As it promised to be rough on the long stretch of lake for canoes, loaded as ours were, we took the small steamer Whyte to the mouth of Little Wabigoon river. The pilot did not recognize the reedy mouth of the river, and left us at the wrong point, where we lost some time before making our way into the channel.

Little Wabigoon river.

The river is large and placid, flowing in a series of wide bends through a broad low valley. An hour and a half's paddling (about five miles) brought us to a small rapid, or riffle, up which one canoe paddled, while the other made use of a good five-chain portage on the north shore. The rock seen at the rapids and at one or two points before is Huronian. A half hour's further paddle (about two miles) brought us to the mouth of a respectable creek coming in from the south, up which we went to Long lake. Our course on Little Wabigoon was a little south of east, and this was now changed to a little east of south. The water of Little Wabigoon, like that of the lake into which it flows, is turbid, but the tributary has beautifully clear water. The shores of the tributary are everywhere swampy and only a few points show rock, all Huronian. About five miles up stream there is a rapid with a fall of about 18 feet (aneroid) which would furnish a good water-power at the stage of water when we saw it. It is probable that a small steamer could go the whole way up to the second rapid if a few boulders were removed from the channel at the lower one.

The creek above the rapid widens insensibly with marshy and wooded shores until one enters Long lake. The lower marshy end of the lake affords very few spots high and dry enough for a camp. The upper part however is open, with high shores. A hill on the southwest shore was climbed to get a general view, which was very fine. There are a few bunches of good Norway pine near the southeast end. The lake with its clear water and variety of shore was very attractive; but we saw little quartz on the points touched at, which were all Huronian. A specimen taken for assay yielded nothing.

Across the height of land to the Turtle waters.

Near the upper end of Long lake a large stream, no doubt the outlet of Stormy lake, enters from the south as a rapid. Shortly after passing Niven's 5th meridian Long lake narrows to a bay, from which there is a portage of about a quarter of a mile to a lake perhaps two miles long, having beautifully wooded shores with some white and red pine. The only rock seen is Huronian. The rise on the portage is about 50 feet (aneroid). Another portage of half a mile with a rise of about 80 feet leads to another much smaller lake, or rather pond. Here there is a very bad half mile of portage across the height of land between the Wabigoon and Turtle waters. The path is blocked with much fallen timber. My aneroid registered a rise of about 18 feet in crossing the height of land.

The Turtle River System.

The lake we now entered, belonging to the Turtle river system, had rather transparent brown water, and was cut up by several long narrow peninsulas in a rather puzzling way. Near the lower (southern) end an island-like hill of rock is connected with the eastern shore by a long, narrow sand spit on which we camped. Two miles below this sand spit, where the lake had narrowed into a channel with some current, we saw Laurentian rock

for the first time, coarse red granitoid gneiss. From this on the river, which flows nearly south for eight or 10 miles, follows the contact of Laurentian and Huronian, the latter rock showing on the western shore in general; though as usual the two rocks are greatly mixed, dikes penetrating the Huronian. Near the mouth of a creek there is a rapid with two feet of a fall, and a portage of two chains. Along this part of the river the shores have been burnt and the blackened trunks are beginning to fall with the winds.

A Laurentian-Huronian contact.

About a mile below the small rapid there is Huronian rock with a strike of 240°. Soon there is a second rapid with a fall of three feet and a very rough portage of 2½ chains. The rock on both sides of the river at this point is medium grained flesh-colored granite.

Going on down the river we pass a small lake and at last came to a large lake, Pekangoming, but crossing its narrow northern end enter the river once more, now flowing northwest. Along this portion of the route there is Laurentian rock containing breccia-like mixtures of Huronian fragments. A mile below the lake there is a third rapid with a fall estimated at six feet, and a good portage of six chains, as cut out, though it might be shortened. The rock here is Laurentian.

The river turns west, after two or three miles of a north and northwesterly course below lake Pekangoming, and a well formed terrace rises seven feet above the water. A mile and a half beyond there are two small rapids close together with a total fall estimated at five feet and a portage of two chains at each, on the west bank of the river. Less than a mile of swift water brought us to another rapid, long and with a fall of about seven feet, the portage being about a sixth of a mile in length. The rock along this part of the river is Huronian (diorite schist) much intersected with dikes. A terrible thunder storm interrupted our afternoon's work for an hour or two, and in consequence the river rose several inches during the night. The water runs very quickly off from this burnt district of bare rocky hills.

A quarter of a mile brought us to another portage with a drop of 36 feet (aneroid) in a sixth of a mile. The fall is magnificent and will some day furnish a fine waterpower. Three-quarters of an hour's paddle intervened before the next portage, of two chains past a pitch of two feet. In ten minutes there was another drop of two feet with a half chain portage. Less than half an hour later there was a two-chain portage past a fall of two feet; and a mile beyond, one of a single chain past a fall of three feet. The next portage was of six chains, and the next a third of a mile of bad trail past two falls, dropping about nine feet in all. By this time we found ourselves well advanced on the Rainy lake sheet of the geological map, on which the portages were marked as well as the height of the falls; which was a great relief, since we had several times been in doubt as to our course, though we had never actually lost it.

We passed Jones lake, a small sheet of water, just touching its eastern end, and proceeded down the river to the beautiful Big Turtle lake, which is five or six miles long but nearly cut in halves by a large island. A mile or two south of the lake there is a short portage, and not far below this a splendid fall, which the geological map puts at 33.8 feet. This will give an admirable waterpower, which can be made available by a cut 300 feet long, partly in rock however.

Jones and Big Turtle lakes.

Much of the rock visible on the shores north of Jones lake, mapped as "hornblende granite gneiss," consists of ordinary Laurentian rock filled with large irregular masses of black or dark gray rock, more or less coarse grained hornblende schist or diorite schist pierced by many dikes and bands of granite, or a gneissoid rock. They are apparently only Keewatin schists more highly metamorphosed than usual.

The scenery on Turtle river up to Big Turtle lake is dreary, consisting mainly of knolls of whitish granite covered with small burnt timber, the valleys largely occupied with lakes or muskegs. The river wanders in an erratic way, often without a definite bed, the whole suggesting a very new hydrography.

Scenery of Turtle river.

Passing through Robinson lake we followed the river south and then southwest between low alluvial banks clothed with green trees and showing few outcrops of rock. We saw nothing of the band of Keewatin shown on the geological map, but might have found it by going inland as far as the hills.

Once more coming to rapids my canoe ran the first one, which was small; but the other canoe, steered by the cook, struck a rock and swamped. Our loss was not as serious as when his canoe swamped on Lake of the Woods, and after a short delay we went on down stream to the end of the Bad Vermilion portage on Little Turtle lake.

We found this route between the Canadian Pacific railway and Shoal lake interesting as covering new ground; but with its twenty-three or more portages, mostly short, but a few very bad, and its very winding stretches of river, one loses time as compared with the old and roundabout route by Manitou lake and river, Rainy lake and Seine river. It seems as though few traverse the Little Wabigoon and Turtle route, since some of the portages look little used.

The Huronian-Laurentian contact near the height of land between the two rivers should be worthy of attention from prospectors.

Olive or Preston Mine.

A short visit was paid to the Preston mine before we crossed the long portage to Bad Vermilion lake, but as Mr. Preston, the manager, was away we found some difficulty in getting information regarding the property. Immense changes had been made since my first visit, when a tent on a point represented the only settlement. On July 10 we found a considerable area cleared and the work of clearing and burning still going on. Several houses had been built, a steam sawmill was on the ground and had furnished lumber for the building of the mill, then under way. It was stated that 25 men were employed, mainly on surface work.

Improvements at the Mine.

As the vein had been stripped only a short distance when I visited the location the previous summer, under the guidance of "Doc" Gardner, its discoverer, we looked over the ground more carefully now. The vein, which is distinctly a bedded one but usually with well marked walls, widens and narrows frequently, running from six inches or less to about two feet in width, and having a strike of about 80° with a dip of about 70° to the north. It may be that there are several lenses of ore overlapping one another. The country rock is a finely wrinkled, greenish gray sericite schist or phyllite, generally called slate. The quartz contains a considerable amount of sulphides, pyrite, pyrrhotite and chalcopyrite, and also a little dolomite. Contrary to the usual condition of affairs, the large lenses are said to be the richest.

During a second visit to the region in October I found that the Alaska mill, of two heavy stamps, had been running a short time; and Mr. Preston was good enough to show me several gold bricks produced and to give me the latest information regarding the mine. Two shafts had been sunk, 400 feet apart, shaft A being down 95 feet with drifts at the 65-foot level, running 25 or 30 feet east and 20 feet west. A winze was down 40 feet at a distance of 65 feet from the shaft.

An Alaska mill in operation.

During 16½ days' run about 109 tons of rock from shaft A had been milled, almost half slate. The result had been 293½ oz. avoirdupois of gold, supposed to be worth $16.50 per oz., amounting in value to $4,843, or about $44 per ton. It was supposed that from $1.75 to $4 remained in the tailings, owing to imperfect working of the mill, and that there were 6½ per cent. of concentrates which would run about $70 per ton. This showing is certainly very good, and if further development proves the continuance of the ore supply the mine should prove valuable.

Mill test of the ore.

A wagon road has been cut from Little Turtle to Bad Vermilion lakes, but owing to rains and heavy traffic it was in a horribly muddy condition on August 10.

Lower Seine Region.

The Lower Seine region has been so fully described from the geological point of view in previous volumes of the Bureau of Mines Reports that nothing more need be said of it here. We found that development had not

gone on as rapidly as had been expected the previous year. The Foley mine owing to various vexatious delays in getting in its air compressors was not working full time, and no work was proceeding at the Ferguson mine.

The Foley Mine.

In October I found that the machinery for the Foley was just on hand, and it was expected that the mine would soon be in a condition to keep the mill going continuously. At that time the main shaft was down about 300 feet, and the vein averaged 3½ feet in width as compared with 28 inches in the upper part. At the 210-foot level the vein was 7½ feet wide to the north of the shaft. About 400 feet of sinking and 900 feet of drifting had been done in all early in October. The quartz had not turned out as rich as was expected from the results of assays, only about $12 per ton being obtained on the plates. The concentrates were not over one per cent. and carried $75 to $100 per ton. Though the gold contents were less than had been anticipated, they were quite sufficient to yield a good profit from economical mining and milling, and it is to be hoped that the company's enterprise and perseverance will be well rewarded. It was stated that the mill had produced $35,000 up to date.

The AD2 Mining Company.

The AD2 mine is on the same area of protogine, but farther north. We found the men actively at work putting up camps and a small two-stamp mill of a new pattern. This property was surveyed April 15, 1894, having been found by J. S. Campbell before the Wiegand mine, so that it was the first discovery in the region. The AD2 Mining Company of Duluth own this location, as well as AD3 and 4. It is incorporated under the laws of Ontario, Mr. W. W. Butchart being president and Mr. W. Fawcett secretary. In October I found that the mill had proved a failure and had been removed. At that time 18 or 20 men were at work, and the foreman, Mr. E. Falconer, stated that a shaft 37 feet deep had been sunk on the Gem vein, and that a drift 135 feet in length had been driven on the same vein 100 feet down the hillside, the vein being four feet wide. A mill run from this ore was said to be very satisfactory in spite of the poor work done by the stamps. The Moose vein had been drifted on 75 feet, had distinct walls and was 3½ feet wide. A specimen of quartz from the mine assayed $10 per ton.

Randolph or Golden Star Mine.

Just north of the Ferguson mine, in the Huronian beyond the protogine area, is the Randolph or Golden Star mine, AL114, 116 and JO4, belonging to the Seine River and Rainy Lake Exploration Company, Mr. Thomas A. Merritt being president, Mr. Edwin Ward manager and Mr. W. J. Merritt superintendent. The headquarters of the company are at Duluth. Eight miners were employed and eight surface men putting up camps. The ore here is very rusty or else charged with sulphides, the vein averaging five feet wide. A shaft had been sunk 45 feet on July 12. Two specimens taken from the dump assayed 1 dwt. and 3 oz. 7 dwt. per ton respectively. The dump was however not carefully sampled, and the results must not be looked on as giving the average value of the ore.

The Alice A Mine.

The Alice A mine, formerly known as the Archibald location, lies north of Wild Potato lake, and in July was reached by a trail three miles in length, largely through muskeg; but now has a road connecting it with Bell City on Shoal lake. It is owned by the American-Canadian Gold Mining Co. of West Superior, Wis., Mr. A. S. Hillyer being president, and Mr. G. H. Hillyer manager.

Work was only beginning in July. A crosscut had been made across a band of rock showing many bedded veins, a pit about 10 feet deep having been sunk at each end. There was a considerable quantity of quartz to be seen, though the veins are very irregular. Some of the quartz contains iron pyrites, copper pyrites and galena, and rich specimens of gold have been obtained from the property. Much more development than we saw during our visit will be necessary to prove the value of such a property.

The country rock of the Alice A mine is felsite schist of the Huronian, but it lies not far from the Laurentian contact, which follows the channel of Little Turtle river. On the way north from Wild Potato lake some of the ridges of rock passed are schist

conglomerate, doubtless a continuation of the conglomerates of Shoal lake. The country traversed on the trail is on the whole very level, and with the exception of some muskeg and some ridges of rock should prove very favorable for the proposed Rainy River railway. The woods are mostly small second growth.

On July 14 we started up the river for the Sawbill region. As the route with its numerous portages has been described before, no reference need be made to it now.

The Harold Lake mine we found shut down with only a caretaker in charge.

Upper Seine Region.

We found much activity at the Sawbill and Hammond Reef mines, a 10-stamp mill being in process of erection on each property, and development work going on also.

Sawbill Mine.

At the Sawbill mine the shaft was down 155 feet, with 500 feet of drifting at two levels, 60 feet and 120. The vein was 18 feet wide at the bottom of the shaft. Sixty men were employed, 24 of them miners. As Mr. Bow's report will give full details, it will be unnecessary to do so here. The geology was taken up in last year's report. Since our visit the mill has been running on the large ore pile, with results that have disappointed those interested in the mine; the ore running much lower than had been estimated from the results of assays.

One end of the Hammond Reef "stockwork" is said to extend to the Sawbill property, and may be of importance in the future.

The Hammond Reef.

Extent and character of the Reef.

The Hammond Reef, or Dike, as it is often but incorrectly called, was visited and examined on July 17, 1897, and one or two following days. This remarkable "reef" consists of a zone of greatly shattered protogine or altered granite, in which quartz has been deposited, filling all the small fissures and cementing the rock together again. It may be followed for several locations in a direction about N. 25° E., roughly parallel to the southeastern shore of Sawbill lake.

The country rock is mapped by the geological survey as Laurentian biotite-granite-gneiss, and Huronian schist crops out a mile or two northwest, so that the reef is not far from the contact of the two formations.

Location 337X.

At the time of my visit a crosscut was being made on location 337X, the length being about 200 feet and the cut about 26 feet deep. Rather coarse grained granitoid gneiss, greenish gray or reddish gray in color, occurs at each end of the cut, the space between showing crushed and slickensided protogine (granite) with much intermixed quartz, the width being about 100 feet. A band of green schistose rock towards the western side of the cut, found under the microscope to be an impure dolomite with some chlorite, appears to influence the gold contents of the zone, the richest rock occurring in its neighborhood. The green dolomite weathers red. In it and the adjoining quartz, as well as the protogine, iron pyrites occurs in varying quantities, sometimes also a little galena, zincblende and magnetite.

The pay rock was stated to be about nine feet wide, dipping 50° to the southeast, as observed on the rough foot wall of green schist. Some minute specks of free gold were visible in rock from the northeast end of the cut and a panning of ore from the open cut gave a fair tail of gold, very fine colors for the greater part, but with a few larger particles.

There are three quartz veins associated with the reef, and on one near the stamp mill a shaft 60 feet deep had been sunk. The quartz was not promising. B vein, near the open cut, dips about 40° towards the south, and apparently runs into the reef. It is about three feet thick, carries some free gold and affords fairly good looking quartz. A new vein was being explored somewhat to the northwest of the reef, averaging at least a foot in width, but in some places much wider. This vein is nearly vertical, shows some free gold and contains much galena. The quartz looks well, but is stated to be low grade.

The crosscut above described is said to be at the narrowest and least promising part of

the zone, though it has furnished some free gold all the way down.

Location 316X.

On location 316X, towards the southwest, the shattered band of protogine with intermixed quartz is much wider, at least 300 feet. Some of it is breccia-like, and portions are of green schist similar to that already described. Here a series of small pits and strippings has been carried across the zone or reef, disclosing on the whole better looking quartz than that at the open cut on 337X. A bit of rock from this portion weighing three or four ounces panned very well, showing a tail of very fine gold an inch and a half or two inches long. This was of course a selected piece, and no doubt ran much higher than the average.

At the time of my visit the mill was not completed, and no important test had been made of the ore ; but I satisfied myself that the deposit, including shattered protogine and quartz, forming what the Germans call a "stockwork," is of immense dimensions, and that some parts of it at least carry gold.

As a good water power is available on Clearwater creek, two or three miles away, a large mill could be operated inexpensively ; and I estimate that by working on a sufficient scale the huge ore body could be treated at a profit if it will average $5, or perhaps even less, of free milling gold. If the average rock runs above $5, it seems as if the mine should be a very profitable one ; and if the whole width of from 100 to 300 feet, with a length of about three-fourths of a mile, as far as followed by myself, should turn out to be of workable grade, the mine must certainly be of very great magnitude and could be worked for a long time quite inexpensively as an open quarry.

Assays of the ore.

Seven assays of ore from the Hammond Reef were made in the laboratory of the School of Science, Toronto, chiefly from samples obtained on 316X. Three were select samples and of course ran above the general average. The highest, taken from a small cut 200 feet from the west wall on location 316X, yielded 3 oz. 3 dwt. ; two others, 1 oz. 18 dwt. and 1 oz. 9 dwt. respectively. Three samples taken from average rock gave a trace, 4 dwt. and 16 dwt. per ton. A specimen picked up from the tramway ballast gave 1 oz. 19 dwt., but of course an average of the ballast would probably run much lower. The results of assays given here must not be taken as representing the average value of the ore, since no attempt was made to sample such an immense body of ore in a complete way, our time being too short for the purpose ; but the results certainly show that the rock is auriferous over a considerable width.

The Hammond Reef was discovered by an Indian, who brought in Mr. Hammond to see it. The latter was at first much disappointed with the barren look of the rock and the absence of a distinct vein ; afterwards, however, finding that the material panned well, he was better satisfied.

A short visit was made to the beautiful Clearwater lake which furnishes about a 50-foot head of water, as shown by aneroid, in the descent of its creek to Sawbill lake. It lies entirely within the Huronian schists, and several locations have been taken up near its shores ; but as little development work had been done on any of them and our time was limited, we decided to proceed on our way up Seine river. We found a busy canoe traffic on this formerly lonely waterway, numbers of visitors coming in from the railway at Bonheur, and Indians going out with empty canoes or returning with heavy loads of supplies. The Government road was advancing and had already cut off some bad portages.

The Clearwater Falls.

On to Lac des Mille Lacs.

Toronto and Western Co.

'At the entrance to Sawbill lake on the Seine river is a camp of the Toronto and Western Company. The cook, in the absence of the manager, Mr. E. W. Lockman, informed me that they were developing two properties, 412X down the river and 393X up. The latter was visited, and proved to be a zone of shattered granite running north 25° west, containing numerous quartz stringers. The widest of these was 18 inches, the average about a foot. The quartz contains a little iron pyrites and sericite, and specks of free gold are found. The shattered zone extends

over a oare hill, and on this three pits a few feet deep had been sunk, the extreme ones being 200 feet apart. Three miners were at work sinking one of these pits. W.'

About two miles above Sawbill lake, at the point where the river enters Lynx Head lake, Mr. M. W. Bates owns AL66. Here an ore body somewhat like the Hammond reef is being opened up. The band of quartz mixed with some green schist strikes about north 35° east. The green rock becomes rusty on weathering, and the quartz, which is rather white, contains some pyrites, the whole being about 50 feet wide at the crosscut. It is not expected that the deposit will prove high grade, but it is hoped that it may be worked profitably on a large scale; and an adjoining fall of 12½ feet on the river will furnish cheap power for a mill.

Location AL 66.

On an island belonging to the same location there is a vein four feet wide, running parallel to the main reef but a few hundred feet to the southeast, the quartz containing a considerable amount of iron and copper pyrites. Eight chains from the last, at the east end of the island, there is a well defined vein 5½ or six feet wide containing white and rosy quartz with much copper pyrites. This vein has a good foot wall, but less perfect hanging wall. It is in greenish, much shattered protogine.

At the Hawk Bay mine, 324X, under the directorship of Mr. H. A. Wiley, we found Mr. W. A. Harvey as superintendent, who kindly took us around the property. Two shafts were sunk 432 feet apart, one to 80 the other to 90 feet. At the bottom of the 80-foot shaft we found the vein rather pinched, being not more than a foot wide. The main vein on which the shafts are and a smaller parallel one, 125 feet to the west, are very irregular as traced in the surface and are seen equally irregular below ground. The vein strikes about 25° and is nearly vertical in the upper part of the shaft. The quartz is rather white, and the country rock is a greenish gneiss with an east and west strike. The mine, which had 18 men at work in July, has since shut down.

Hawk Bay Mine.

325X, owned by Messrs. Hendry, Tilden and Co., lies to the northeast of the Hawk Bay mine. Here Mr. E. Giessen as superintendent with 11 men was sinking a shaft on a vein running north 30° east, and having a width on the average of about 2½ feet. The quartz, which was very like that of 324X, is associated with green chlorite schist. The shaft was 50 feet deep on July 19.

Location 325X.

'North of Reserve island is location 277X. A zone of sheared granite running north 25° east crosses a point of protogine granite for about 200 feet. The zone averages about 10 or 12 feet and holds small included masses of green schist. Quartz occurs in this decomposed granite and included schist in narrow, irregular seams. The thickest vein seen was 15 inches wide where it was exposed in a pit about 16 feet deep. At the other end of the stripping, about 150 feet distant, a second pit six feet deep and 10 wide had been made. Little sulphide is seen in the quartz or schist, although the latter weathers to a pronounced red or yellow. The workmen were all out for supplies at the time, and no information as to the company was obtained. W.'

Location 277X.

AL 281, 282 and 283 lie a half mile inland from a bay projecting northeast of Reserve island. These locations were visited on July 20, under the guidance of Mr. Hammond, who was attending to some development work at the time, nine men being employed in stripping and sinking pits upon these recently discovered deposits. A vein runs northeast and southwest through a greenish or gray granitoid gneiss. There is often a ridge of Laurentian rock on the northwest side, the vein showing along with greenish sheared protogine and a weathered rusty schistose rock at the bottom. It has been traced more or less continuously for 2½ miles. In some places the quartz with some rusty schist is 10 or more feet wide, but in places no quartz, only rusty schist, is to be seen. The vein dips 50° or 60° to the northwest, under the ridge just mentioned. The quartz often looks well, is mixed with blue-green chlorite in places and carries a good deal of free gold in at least some parts. Three-eighths of a mile to the northwest there is a quartz vein running roughly parallel to the previous one, also in the Laurentian. It

Locations AL 281, 282 and 283.

is said to have been traced over two miles. The vein is sometimes from six to 10 feet wide and has along side, in some places at least, a band of green schist. The hanging wall, where we saw the vein, is partly talcose, partly protogine. The foot wall was not well exposed. This vein dips about 80° to the northwest. Much of the quartz looks very white. Dikes of diabase run through the granitoid gneiss parallel to this vein.

This and the previously mentioned vein were stated to have been found in June by A. J. Leguyer, who was associated with Messrs. L. Roy, J. Savord and James Hammond. This prospecting party had found several new lakes, one six miles in length, in the region they had worked over.

In January Mr. Hammond informed me that a shaft had been sunk in the granite on the northwest side of the first mentioned vein, 40 feet from it. The shaft was then 96 feet deep, and the vein had been struck at 77 feet. Drifting had been begun in each direction.

Across Lac des Mille Lacs to Savanne.

On July 21 we set out for Savanne, via Partridge lake and river and Lac des Mille Lacs. As the route was described in the last report of the Bureau of Mines no further mention of it is required here. Strong head winds hampered our progress, and on the following day almost made canoeing impossible on the wide northern reach of Lac des Mille Lacs. Fortunately the small steamer plying on the lake picked us up and took us in to Savanne.

East on the C. P. R. Line.

On McKay Mountain at Fort William.

On the following day we reached Fort William, and spent this and the next day in visiting some interesting localities near by and in obtaining information. An excursion was made to the top of McKay mountain to look for glacial phenomena and to settle the height of the old beaches so well shown on the mountain side. We found well marked glacial grooves on the very top of the mountain, having a direction of north 60° east, with rounded surfaces to the northeast and rough ones on the lee side to the southwest. We made the height of the mountain almost exactly 1,000 feet above lake Superior, the plateau on which the chapel stands being 517 feet above the lake. These measurements accord fairly well with those made on a previous occasion. The meanderings of the Kaministiquia through its low alluvial plain are seen from the mountain top as if on a map, and the ox-bow lakes left behind by changes of the channel are specially interesting.

Kakabeka Falls on the Kaministiquia.

Availing ourselves of an excursion, we visited Kakabeka on the Kaministiquia, so as to study the section of the Animikie shown there in the gorge. A fine series of terraces may be seen on the way to the falls, which are in themselves magnificent. The brown water foams into creamy white in the descent, and is very beautiful though so entirely unlike the clear blue-green of Niagara. An enormous waterpower is available here if required for electrical smelting or other purposes in the future.

The soft, almost horizontal Animikie slate, with its bands of chert, makes a great contrast with the much folded, highly crystalline Laurentian and Huronian rocks among which we had been working for the past few weeks, and on which it rests unconformably.

On our way east Professor Willmott visited Schreiber and the Empress mine at Jackfish, which I had examined on a previous occasion; and I stopped at Peninsula and Missanabie.

Peninsula to Port Coldwell.

A reported iron ore discovery.

As it was reported that iron ore had been found near Peninsula I stopped there a day and walked west along the railway to Port Coldwell. I found however that no one at Peninsula knew of any iron deposits of importance. Mr. Mudge, hotel keeper at the place, and the foreman of the section kindly went with me as guides for part of the way. The region traversed is almost mountainous, lofty and precipitous hills rising all around. The coast of lake Superior is very grand along this part of the railway. The rocks for the greater part of the distance are syenites, dark gray or red in color; but about five miles west of Peninsula dark green, very fine grained amygdaloids occur to the north of

the railway. A few thin seams of magnetite occur in this rock within a mile of the railway, near a small lake with rugged walls of rock. The thickest vein is not more than an inch or two, so that the ore deposits are of no importance. Black sand (magnetite) occurs a mile or two east of Peninsula, but not in large beds.

Pic river and Port Coldwell.

Pic river flows into lake Superior between Peninsula and Port Coldwell, and large and small veins, said to carry gold in fair quantities, are reported from points up this river; but I had neither time nor a guide to visit them.

Port Coldwell is a picturesque fishing village surrounded by very striking scenery. The rocks observed along the way will in the future perhaps furnish useful building and ornamental stone, since syenites of all colors from black to red and pale gray, as well as diorite, both dark and light gray, occur in great quantities at points where quarries could be located close to harbors. The characters of these rocks will be described in the petrographical section of this Report.

Schreiber and its Vicinity.

'A little over a mile from Schrieber is the pyrite deposit on location R606 owned by the Davis Sulphur Ore Company of New York. The president is H. J. Davis; treasurer, C. B. Stranahan. The country rock is a diabase, through which a dike of granite has been erupted. The pyrites deposit extends at right angles to this dike up to it, but not beyond it. The deposit has been uncovered for about 70 feet and has a width of three to 10 feet. On the surface it has decomposed to a gossan for about 10 feet, which has all been removed. The ore is mostly pyrite, though there is considerable pyrrhotite in places. The latter frequently carries chalcopyrite. The pyrrhotite is considered useless as a source of sulphur. The pyrite is very pure and a trial shipment is said to have given good satisfaction. At the time the property was visited a tunnel was being driven into the hill to prove the width of the deposit at a depth of 25 feet. If the deposit proves as extensive as supposed a tramway will be built to lake Superior and the ore can then be cheaply shipped to the American market. The present owners have had long experience in manufacturing sulphuric acid. Their mines in Massachusetts are now nearly exhausted, and they are looking to lake Superior for raw material. The mine foreman said that he understood $15,000 had been paid for the property.

The pyrite deposit on R606.

'A few hundred yards from the pyrite, carbonaceous shales outcrop along the bank of a small creek. A pit was excavated in the side of the hill under the impression that the material was graphite. Several barrels of the more graphitic shales were standing near by. No more work is being done here, as it is realized that the substance is useless.

'The following morning I went with Mr. Samuel Otisse to see the locations of which he is managing the development. We went east of Schreiber for four miles on a Canadian Pacific locomotive, and then followed a good trail to the north of the track for three-quarters of a mile. The locations AL216 and 217 are owned by the Otisse Mining Company of Schrieber. President, George Marks of Port Arthur; secretary, Alfred Peters of Schreiber; capital, $1,000,000 in $1 shares. Five veins have been found on the property, but only one has been worked. This, the main vein, runs about northeast in diorite schist. Two shafts have been sunk on the vein 1,200 feet apart. No. 1 was down 34 feet and showed a band of quartz four feet wide mixed with a little schist. The south wall is well-defined by a dike of diabase running with the schists. On the north the wall is not clearly defined. No. 2 shaft, situated on a hill, has been sunk for 30 feet. The quartz is here mixed with schist as in No. 1, and the same dike of diabase forms a definite wall on the south. The quartz is blue-gray in color, with considerable pyrite and a little visible gold. In No. 2 a little pyrrhotite is seen in the quartz. A mill test of one ton made at Kingston gave $15.53 as the value of the free gold and concentrates. A sample taken for assay gave $15 per ton at the School of Science. W.'

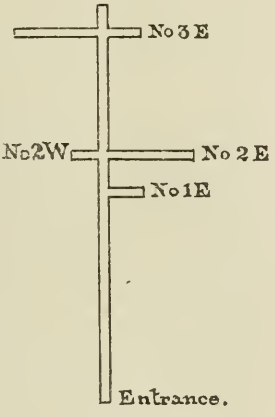
The Otisse Mining Company.

The Empress Mine.

'At Jackfish bay I met the caretaker of the Empress mine and he was kind enough to

guide me in and show me the property, though not without some misgivings. The mine was closed down and he had strict orders to admit no one to the underground workings. After some trouble I succeeded in persuading him that I had a right to enter and that I could not wait for two days to obtain permission from the president. The early workings and the mill have been sufficiently described by Dr. Coleman in the sixth Report of the Bureau of Mines, p. 110. Since his visit the tunnel has been driven into the side of the hill intersecting the veins and permitting of very economical working to that level. All ore is delivered by gravity at the top of the mill, and no pumping is necessary to drain the present workings. Mr. Bow, the Inspector, and myself measured with a tape the length of the tunnel and drifts, a plan of which is here given on the scale of 200 feet to the inch.

Extent of workings at the mine.



'From the entrance of the tunnel to No. 1 vein is 229 feet. A drift has been carried along it for 35 feet to the east. The vein is about eight feet wide and pretty uniform. Near the tunnel a little stoping has been done, the only work of the kind underground. The whole vein seems well mineralized. On the west side only a shot or two has been put in this vein, but there is a large showing of quartz. Just south of the vein about 20 feet of well-mineralized quartz is seen on the side of the tunnel. A little north of the same drift there is a similar showing six to nine feet wide. Nothing has been done with these veins yet. No. 2 vein is cut by the tunnel 263 feet from the entrance. A drift has been run 82 feet to the east along a vein six to eight feet wide. At the end of the drift the vein is seven feet wide, of which about one-half is quartz and the rest schist. On the west a drift has been carried 31 feet on No. 2 vein, where it pinches out entirely. In the roof of the drift near this tunnel there seems to be plenty of quartz. Seven feet north of No. 2 drift a vein of quartz well mineralized and seven feet wide is seen on the face of the tunnel dipping 45° south. The third drift was begun 386 feet from the entrance of the tunnel. To the east it was carried 32 feet along a vein eight feet wide. The vein material consists of quartz carrying pyrites in considerable schist. In places about half of the vein is quartz. On the west the drift has been run 84 feet along a vein averaging about seven feet. As on the east, the quartz is distributed through considerable schist. At the end of the drift the thickest single piece of quartz was six inches. Nearer the tunnel there was more quartz. The tunnel has been run 31 feet beyond the third drift. Below the mouth of the tunnel is a large, high ore dump of quartz and pyritous schist in about equal proportions.

'The buildings at the mine are very neat and complete. They comprise the stamp mill, sleeping and eating camp, assay office, blacksmith shop, machine shop, dressing room, powder houses, stables, grain shed, oil house and pump house. Previous to the driving of the tunnel considerable surface work was done. A number of test pits were sunk and some mining in an open cut. These have now all been abandoned.

'At the end of July the mine was closed pending a report on the property. The richness of the quartz is hardly up to expectations, and it is understood that the directors contemplate sinking a shaft to prove the amount of vein material. If this is as great as supposed a much larger mill will be erected. Assays of four samples of the ore ranged from $1 to $4, averaging $2.50 per ton. The concentrates, containing a good deal of sand, yielded $6 per ton.

'On the road from the Empress to Jackfish bay I passed the Mogotherium mine, owned by the Jackfish Mining Syndicate. Mr. J. T. Horne of Fort William is the manager, but no work was going on at the time. Some of the workmen still camped on the property told me that the vein had been traced for half a mile and pits were

Mogotherium Mine.

sunk at intervals. I visited the deepest of these pits. At one there is a vein of white quartz in granite and carrying pyrites and galena. The vein is somewhat irregular, the quartz and granite being mixed. No free gold is visible, but some is found by assaying. At another pit the walls are of schist and the quartz occurs in stringers through it. A little free gold has been found here. The quartz is very white, but carries pyrite, chalcopyrite and galena in small quantities.

'On the east side of Jackfish bay is the Megatherium mine, owned by the same company as the Mogotherium. As it was not working, and as I was told there was nothing to be seen but a shaft full of water, I did not think it worth while to lose a day by stopping to examine it. A sawmill has been erected on the property to provide lumber for a stamp mill, which apparently will not be required for some time. W.'

Megatherium Mine.

Missanabie Station.

Three and a half miles west of Missanabie Station on the C. P. R. there is a cutting in which coal was supposed to occur. A visit to the spot showed that the material taken for coal is only a black volcanic glass, which has been formed by rapid cooling of the edges and thinner parts of several diabase dikes, the largest one about a foot and a half wide. The country rock is a slate or phyllite. A pit 10 feet deep has been sunk north of the railway upon the largest dike, there only a few inches wide.

An "exposed" coal deposit.

Part of a day was spent in visiting some gold locations on the shores of Dog lake, seven miles southwest of Missanabie, and easily reached by canoe from the station. Here Mr. John Halliday has taken up two locations of 40 acres, showing numerous veins and irregular masses of quartz in a country rock of green altered diabase, much shattered in places, the fissures being filled with quartz. A dike of granite or felsite and some patches of coarse grained diabase occur in the fine grained altered rock, not far from some of the veins. Part of the granite is changed to protogine. One of the veins is 3½ feet thick and is traceable some distance along a ravine. It lies very flat, but is irregular, so that the dip was hard to determine. As a rule the quartz is white, but portions of it contain pyrites and galena. Free gold is not seen in the ore, but portions of it show gold when assayed.

Gold locations.

These locations may be looked on as belonging to the most northerly part of the Michipicoton mining region, which has been described by Professor Willmott in another part of this Report.

Wahnapitae Region.

The nearest of our new northern gold fields to the more populous parts of the Province is that of Wahnapitae, since by rail and stage it may be reached from Toronto in twenty-four hours. Sudbury is the natural capital of this gold mining region, though it is generally thought of only in connection with mines of nickel and copper.

Routes to the Wahnapitae country.

Lake Wahnapitæ may be reached by a stage drive of about 20 miles from Sudbury, or by a somewhat shorter, though stonier road from Wahnapitae station, where the C.P.R. crosses Wahnapitae river. From Boland's Landing on a deep bay to the south of the lake a steamer plies to the Crystal and other mines on the east side of Wahnapitae, the distance being about ten miles. A few hours' canoeing with two or three portages lead from this point to the more easterly properties of the region, about Kookagaming lake. From the south end of this lake a road somewhat shorter than the two that have been mentioned leads south to Markstay, the second station east of Wahnapitæ on the Canadian Pacific.

Much of the country between the gold region and the points mentioned along the railway, Sudbury and Wahnapitae, is covered with thick drift deposits, so that little solid rock is visible and prospecting can hardly be carried on; but east of lake Wahnapitae this difficulty vanishes, and the numerous small lakes with many bays and islands afford excellent rock exposures. This part of the region corresponds precisely to the "rocky lake country" of Lake of the Woods district.

Geology of the region, compared with Lake of the Woods district.

The region is covered by Dr. Bell's map of the districts of Algoma and Nipissing (Sudbury Sheet) published by the Geological

Survey in 1891, and the corresponding map, somewhat revised, published by the Bureau of Mines in 1892. These maps are of much value in studying the geology of the region, though, as one expects when a large tract of difficult country is mapped in a limited time, there are minor points requiring changes.

The geology of the region was described many years ago by Alexander Murray[1], and more recently by Dr. Bell[2], in connection with the Geological Survey.

The rocks of the gold region as mapped by Dr. Bell are entirely Huronian, with numerous eruptive masses of greenstone (diorite or diabase) penetrating them. The prevalent varieties are pale quartzites and graywackes, the latter sometimes slaty or massive in appearance, and often containing sparsely scattered pebbles of granite, syenite or jasper. A gray limestone occurs on Wahnapitae river to the south, but is not widely found in the gold district.

In general there are considerable differences between the geology of this gold region and that around Lake of the Woods and Rainy lake. In the more westerly gold district quartzites are rare and graywackes only moderately prevalent, while green schists are the commonest rocks. As a general rule, too, in the western region gold is found chiefly near the contact of Huronian with the Laurentian gneiss and granite. Here however gold deposits are found eight or ten miles away from the nearest Laurentian contact.

On July 29 Professor Willmott and the writer left Sudbury by stage for Wahnapitae, a distance of 16 miles in a straight line, but several miles farther by the somewhat crooked road. On the way the pleistocene deposits proved of much interest. For six miles to the north and east of Sudbury there are plains of clay and silt forming good soil, evidently old lake deposits. Most of this part of the route is well settled and the farms showed good crops of timothy and clover and fields of oats, peas, etc.

Sudbury to Lake Wahnapitae.

Beyond the lacustrine clays there are level plains of sand, probably deposited by glacial streams from an ice-foot to the east. A few farms are occupied on these barren looking plains. Some miles through the sand bring one to the Holland and Emery Lumber Company's Headquarters camp, where one is surprised to find a small village and a narrow gauge railway used in lumbering.[3] This road runs from a point on the Wahnapitae river a mile or two north of Wahnapitae station on the C. P. R., and branches out in various directions over the sandy and stony plains. When the timber is cut from one portion the rails are taken up and relaid toward another point. Much of the grading is done by trestles or filling with logs. This is perhaps the only railway in the Province having no direct connection with any other road. It was once built down to the C. P. R., but a bridge at that end of the road has become unsafe, so that the last mile or two of the railway have been abandoned.

From the Headquarters camp there are about eight miles of travel to Boland's Landing on lake Wahnapitae, mostly over a very interesting moraine country, in general fairly level, but often broken by kettle holes of immense size. The largest kettle is three-quarters of a mile in length by a quarter of a mile in breadth, and is 165 feet deep (aneroid). There is a small lake covering the lowest part of the bottom, and this is said to be 60 feet deep.

Descending towards lake Wahnapitae a series of quite distinct terraces occurs, the descent being about 290 feet as shown by aneroid.

The road was muddy and bad in places on the clay land near Sudbury, but dry and fairly good over the sand plains and morainic region. Several miles of it follow the abandoned road bed of part of the Emery railway. While we were at Wahnapitae a force of men employed by the Government were effecting great improvements in the road, straightening crooked parts and regrading others.

Except on a hillside near Headquarters camp, no rock was seen in place after leaving the hills about Sudbury until lake Wahnapitae was reached.

[1] Geol. Sur. Can., 1853-56, p. 174, etc.

[2] Ibid., 1890-91, part F, especially p. 14 and following pages.

[3] Mentioned by E. M. Burwash, Bur. Min Report, 1896, p. 167.

South of Lake Wahnapitae.

Lake Wahnapitae.

Lake Wahnapitae is a fine body of water, unusually free from islands except along its southeastern side. It is about 10 miles in greatest length from east to west and about eight from north to south, affording stretches of open water dangerous for canoes in windy weather. The lake is reputed to be very deep, but a sounding made with trolling lines in the bay a mile north of Boland's showed a depth of only 130 feet where 1,200 had been reported. It is probable that the wider part of the lake, which is quite free from islands, is much deeper. The Wahnapitae river enters the lake on the north side and leaves it from Outlet bay on the southeastern end. It affords an excellent water power between this and the railway.

Sheppard mine and workings.

No mines are worked on lake Wahnapitae itself, though the Sheppard mine was operated some years ago for a short time on the north side of the promontory between the two southern bays. The workings consist of a short drift into the face of a hill near the shore, and of a small open cut near the top of the same hill. The openings show only narrow quartz stringers, now apparently almost worked out. What ore was obtained is said to have been rich, and was treated in an arrastra after the Mexican plan. The stone pavement with its round wall of wood and some parts of the framework as well as the heavy stone blocks dragged round on the pavement by horse power to grind the ore are still to be seen. So far as known this is the only arrastra which has been used in the Ontario gold region ; although for free milling ores this method is said to give good results with comparatively small expense for machinery.

The country rock appears on microscopic examination to be partly granite and partly arkose, interesting from the fact that some parts of the rock are crowded with crystals of mispickel. The shore near the arrastra is of a pale flesh colored quartzite, or rather arkose, since it contains much felspar, easily mistaken for granite.[4]

[4] Royal Com. on Mineral Resources of Ontario, p. 435.

The Mammoth vein.

A mile or two south of this the Mammoth vein was found by John Boland nine years ago and more or less explored by the Bonanza Nickel Mining Company, who own nickel properties near the lake. The vein can be reached from Outlet bay by a trail through the woods, about two miles in length, or by a road four miles long from Boland's Landing. The property lies along a small lake, and the white quartz, sometimes 50 or more feet in width, can be followed more than a quarter of a mile. With the quartz is much of a coarsely crystalline carbonate, weathering brown, and a few sulphides. In large vugs immense crystals of quartz with much corroded surfaces are found. The country rock is diabase, but along one wall a few feet of impure dolomite may be seen. At the eastern end of the vein a shaft has been sunk 60 feet, and 50 feet of drifting has been done at the 35-foot level. The Government diamond drill was employed in exploring this body of quartz in 1895,[5] when two holes were drilled. Although portions of this great mass of quartz carry gold, the average appears to be too low in grade to be workable.

North of Lake Wahnapitae.

Crystal Gold Mine.

The Crystal mine on a small bay or lake connected with the eastern side of lake Wahnapitae by a narrow channel, just navigable by the little steamer which brings supplies and passengers, is by far the most important mine in the region. In fact no other property has been so far developed as to be properly called a mine. The rocks observed on the property are mainly diabase, sometimes containing quartz, and a dark green compact chlorite-dolomite rock, having a very flinty fracture. At the foot of the small hill where most of the veins occur there is a little outcrop of granite, or perhaps very acid quartz diorite, which may have had an important effect on the formation of the veins. These are several in number and irregular in thickness and dip, sometimes making sharp bends and enclosing horses of country rock. On the whole however there seems to be a large amount of quartz, so far as present development has opened up the veins.

[5] Bur. Mines Report, 1895, p. 229.

No. 1 shaft, the most easterly, was down 40 feet at the time of our visit and showe a vein 16 inches wide, containing quartz with chalcopyrite, pyrrhotite and iron pyrites. The vein dips 80° to the south and strikes s. s. E. and W. N. W. No. 2 vein is very flat at first and broken into several portions running at varying angles, but dipping down at the bottom. Many horses of country rock are enclosed in it, but its average thickness is about 20 inches. Two short drifts have been run on this vein, meeting a short distance in. No. 3 shaft has been sunk to 100 feet deep from the top of the hill, striking a vein two feet wide at the depth of 85 feet, and a drift had been run 35 feet into the hill towards it from below but had not yet met the shaft. The quartz from this drift contains much of a carbonate which weathers brown, probably dolomite or ankerite, and small quantities of sulphides.

Workings on the location.

A five-stamp mill made by the Jenckes Machine Company had just finished its first run while we were there. Things were apparently running smoothly under a practical mill man from Nova Scotia, who informed us that the stamps dropped five or at most seven inches, 85 times per minute, with a 35-mesh screen. The gold is 85 or 90 per cent. free milling, and 90 per cent. of the coarse gold is saved in the mortar box. Only a small percentage of concentrates was obtained by the Frue vanner, but the tailings seemed fairly clean. The brick of gold just secured was said to represent about $15 per ton of ore crushed.

The stamp mill.

The name "Crystal" was applied to the mine because of the handsome gold specimens obtained from it, some of them showing plane surfaces. They are not however true crystals, since the surfaces result from contact with smooth faces of quartz, the gold forming plates in thin fissures in the quartz. The mine affords a certain amount of ore much richer than that treated in the first mill run.

Thanks are due to the Hon. Peter White, president of the company, and Mr. R. McConnell, general manager, for accompanying us through the mine and mill.

The Comstock mine is situated just to the south of the Crystal and shows similar geological conditions. As the man in charge refused to let us enter the shaft, there is nothing further to be said of the property.

Comstock Mine.

Having engaged John Boland, the pioneer of the district, as guide and canoeman, we portaged into Matagamishing lake (pronounced by the inhabitants, Matog-amisheen), crossed the lower end of this lake and ascended the crooked McLaren creek for about two miles, where a long and sometimes steep portage leads eastward to lake Kookagaming (pronounced Kokogaming). This is a complex body of water with intricate channels and several long points and islands, making navigation puzzling to the newcomer. A portage of a chain or two across a sandy point saves several miles of paddling when on the way to the main lake. The map is unfortunately not very accurate as regards this lake, which, though only about six miles long, has a very extensive shore line.

Kookagaming Lake.

There are several prospects on and near the lake, and we visited most of those on which any work had been done. A quarter of a mile north of the portage across the sandy point a small boss of quartz porphyry shows itself on the west shore, and a quarter of a mile beyond this a fissile slate occurs. The northern expansion of the lake is connected with the main lake by a narrow channel 100 feet long, having a marked current when we passed it, so that one might properly speak of this northern bay as a separate lake. It has the same clear, colorless water and green, unburnt shores as the mainlake.

Some distance beyond the narrows, on the eastern shore, one sees a log house, the Gold Cliff Mining Company's camp, where we found two men in charge. They took us across the peninsula to another bay, where on the very steep shore a tunnel had been driven in, it was said, for 180 feet. As the mouth of the tunnel was boarded in and locked we were unable to enter it. The quartz on the dump contains much dolomite and some sulphides. Small veins near the top of the steep bluff 70 feet above contain

Gold Cliff Mine.

rusty quartz with copper pyrites. One of the small veins was reputed to be rich in free gold. The country rock is apparently a fine grained graywacke, containing a few small rounded pebbles of red granite.

Moose Mine.

At the south end of Kookagaming lake we visited the Moose mine, WD32, located in 1892, the oldest location on the lake excepting M1 and M2. Here there are several well defined fissure veins in a slaty gray rock containing angular granite fragments. No. 1 vein runs about 120° and dips 45° to the southwest, is about 18 inches wide, and can be traced some hundreds of yards. The quartz is white, containing pyrite, chalcopyrite and galena. Some fragments containing free gold were picked up during our visit. The only development is a pit about 10 feet deep. A sharply walled vein a foot wide runs paralled to it a short distance away, and several other veins two feet wide or narrower may be seen, but the quartz they carry looks less promising. A small mill of a peculiar kind, too frail and light to be of real use so far as one could see, stood in a leaky house not far off; and a fairly good log house on the bay served as dwelling for the man in charge, E. T. Havard, who merits our thanks for his hospitality and kindness in serving as guide.

Location WR35.

We next crossed a portage toward a small lake to the south and visited WR35, said to be owned by Ewan Mackenzie, of Toronto. The main vein here is from six inches to a foot or more wide, runs about 140° and dips 45° to the southwest. The country rock appears to be similar to those mentioned previously, and encloses fragments of felsite and granite. A shaft had been sunk 35 feet on the incline, and the quartz on the dump looked well, containing pyrites and a carbonate resembling ankerite, as well as free gold. There is a smaller parallel vein a few feet to the southwest, also included in the shaft.

Location WD66.

On WD66, a location near the southeast end of the lake, owned by Mr. Charles Ford, there is a vein about ten inches wide, running nearly east and west and dipping 65° to the south. It is irregular, but can be traced for some distance. There is a distinct foot wall, but the hanging wall is not so well marked. The country rock is coarse grained quartz diabase. About 30 feet to the north a parallel strip of quartz runs in a shattered band of rock about six feet wide; and several small stringers three or four inches wide run diagonally toward the main vein. The quartz is heavily impregnated with iron and copper pyrites and contains a little native copper and peacock ore (bornite). Some free gold can be seen, and the rock pans. Still another vein occurs on the property, running northwest and south east, and having a width of a few inches to two feet. It contains much copper pyrites in places. A small dike of diabase runs parallel to the main vein and has a band of quartz along one side, as if the fissure it followed had opened a second time.

On the whole one may say that the veins in this area of quartz diabase are much less regular than those in the graywacke and ash rocks described above. Our thanks are due to Mr. Ford for his kindness in various ways.

North of the Moose mine a hill of light flesh color attracted our attention, suggesting a boss of granite. A climb to its top showed about half a square mile of hills formed of a rock much like binary granite in appearance. A careful microscopic examination since returning to Toronto proves however that the rock is really an arkose, a rock consisting of grains of quartz and felspar cemented together, or perhaps a crushed and reconsolidated granite. A very similar rock occurs on the shore of lake Wahnapitae at Sheppard's mine.

Prospects on and near lake Matagamishing.

On our return to the Crystal mine we visited one or two prospects on lake Matagamishing. At the Last Chance, on the bay forming the south end of the lake, may be seen a vein six or eight inches wide, said to be traceable for a long distance. It runs about 10° south of east and dips slightly to the south. The country rock is coarse diabase. The quartz looks well and carries free gold. Two men were at work on a shaft, which was 18 feet deep at the time. There are several other veins of similar size on the property, but not so rich as the one worked.

We tried to find the Hub mine, a mile inland on the east side of the lake, but failed in our search, since lumbermen's trails were

Portage between Wabatongusheen Lake and Loch Alsh. Photograph by Miller.

On a tributary stream of Oba Lake, near the height of land. Photograph by Willmot.

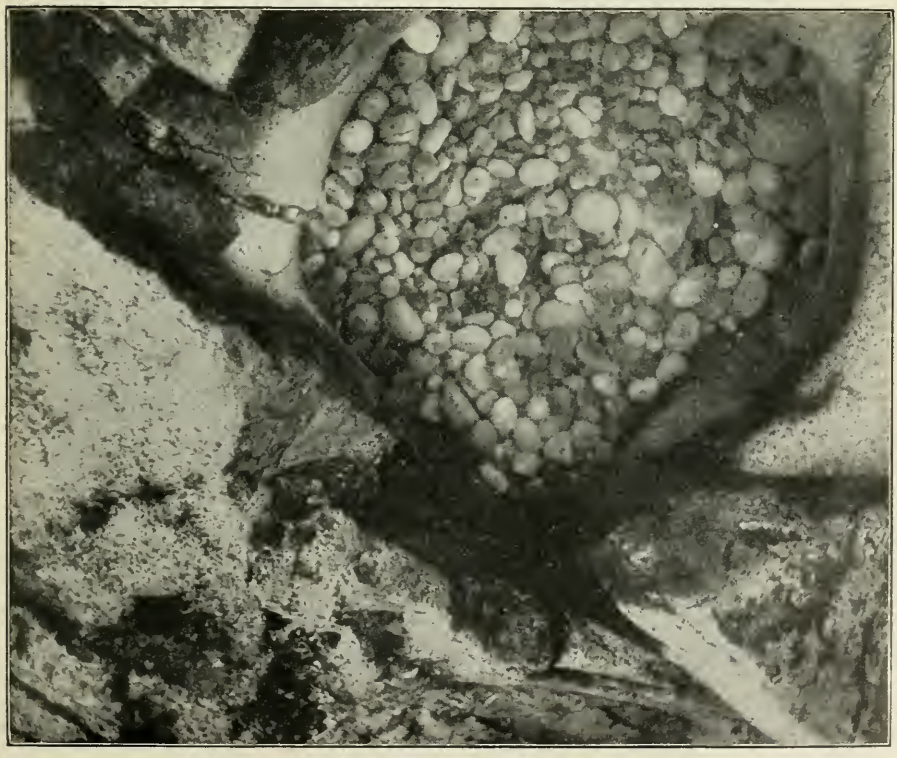
Old Tote-road Landing at north end of Manitowick Lake. Photograph by Willmott.

Falls on Michipicoton River at Little Stony portage. Photograph by Willmott.

Running a current light on Michipicoton River, above High Falls. Photograph by Willmott.

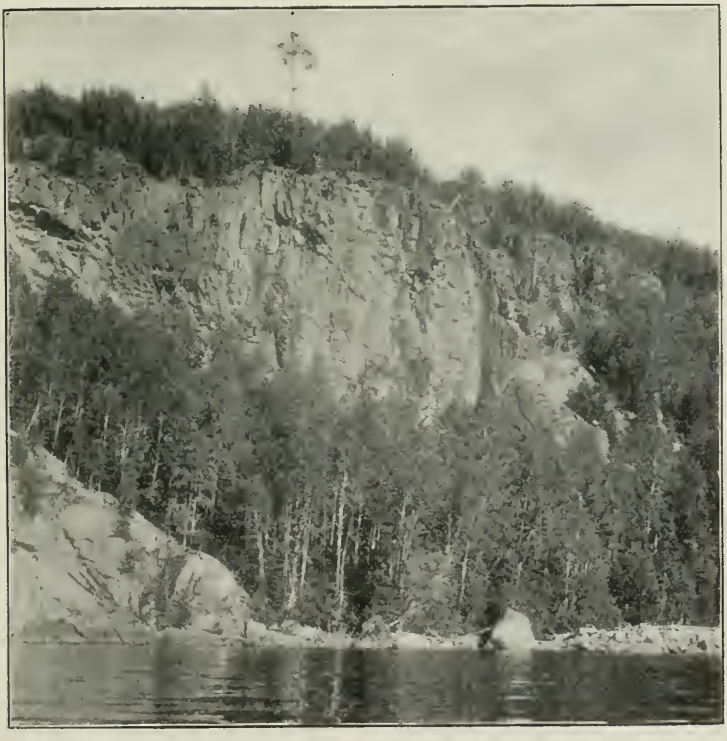
Camp at head of High Falls, Michipicoton River. Photograph by Willmott.

Bed of Michipicoton River at High Falls during low water. Photograph by Willmott.



Pot-hole in bed of Michipicoton River at High Falls.. Photograph by Willmott.

View of the upper end of Wawa Lake. Photograph by Miller.



Cliff on north shore of Wawa Lake.

numerous and we could not obtain a guide. It was stated that a shaft was sunk there on a vein 12 feet wide, and that the quartz assayed well. The two properties just referred to are about two miles east of the Crystal mine.

A mile or two north of this we observed a bed of quartzite containing a breccia with angular fragments of greenstone, but no gold bearing veins are reported from the quartzite, which appears to be uniformily barren.

Discoveries of Iron Ore.

To the north of lake Wahnapitae iron ores have been found, both magnetite and hematite, but as there was no guide available, and we were informed that the ore beds are inland and hard to reach, we decided not to visit them on this occasion.

Comparison with Lake of the Woods region.

Too little work has been done in the Wahnapitae gold region to justify any very decided statements regarding its importance, since only one mine has actually begun to produce bullion, and even that had no shaft deeper than a hundred feet on the 1st of August. The area in which gold has been found is small as compared with the gold field of western Ontario, a fact probably accounted for by the relatively small number of prospectors in the field and the limitation of prospecting in districts containing pine.

So far as our observations go, the gold bearing veins occur in quite different country rocks from those of the Rainy Lake region, most of the veins being in impure dolomite, graywacke or diabase, all of Huronian age and at a distance from any Laurentian contact. In the case of the Crystal mine a small eruption of granite seems to have had an influence on the production of the ore bodies, but no other examples of the kind were seen, if the small stringers of quartz in granite containing mispickel at the Sheppard mine are left out of account.

We saw only one body of quartz of large size, the Mammoth vein of the Bonanza Nickel Mining Company, but this seems to be of too low grade to work at a profit. On the other hand there are several veins of moderate size and numerous small veins which have been proved to carry gold, sometimes very richly, the finest specimens obtained in Ontario having come from the Crystal mine. If this promising property proves as productive in depth as it has been near the surface, its owners should be satisfied.

The fact that in the Wahnapitae district rich, if not very large, veins of gold quartz can be reached from the capital of Ontario in 24 hours, should attract attention to this hitherto rather neglected region.

Sudbury Region

Minerals in Fairbank and Denison townships.

Small veins said to carry gold occur on the rocky hills about Sudbury, but no work of any importance has been done on them and we did not take time to visit them. A day was devoted to visiting the Citizens' Coal, Gold and Nickel Mining Company's property in Fairbank township, near Vermilion river, but some analyses not being complete, no report will be made at present. A visit was made to the McConnell mine, and also to the adjoining Vermilion mine, 20 miles southwest of Sudbury and a short distance north of the "Soo" line.

At the McConnell mine, lot 8, con. 4, Denison township, we found active work going on stripping a large deposit of nickeliferous pyrrhotite. It is stated that the rusty gossan can be followed through several adjoining lots for a distance of about two miles. Where pits had been sunk through the gossan to the fresh sulphides, masses of copper pyrites and pyrrhotite (magnetic pyrites) mixed with some quartz were disclosed, giving promise of an important body of nickel-copper ore. The country rock is diorite with some hornblende schist, on the north side of a band of diorite (or perhaps altered gabbro or diabase) near a narrow outcrop of "syenite" as it is called locally, really crushed and sheared granite. The Drury mine is said to be on the north side of the same band of diorite, and the Vermilion and Worthington mines to be on the south side of it. Rock obtained from properties on both sides of this band contain gold and the interesting platinum ore, Sperrylite ($Pt As^2$), both of which may be obtained by panning. Sperrylite, it will be remembered, has been found nowhere else in the world than in this district. It is probable that the small amount of platinum

obtained from the Copper Cliff nickel-copper ores comes from the same mineral.

Vermilion Mine.

The Vermilion mine, a short distance to the east across a small lake, though worked some years ago has been idle for a long time, owing it is said to disputes as to ownership. Mr. W. G. Duncan, a farmer near by, well acquainted with the mine when it was being worked, took us over the property, which is of special interest from the variety of metals it contains, gold, platinum, nickel and copper. Three small shafts have been sunk on the property, No. 1, the deepest, going down 60 feet. It is stated that ore containing 42 per cent. of nickel is found at the foot of the shaft on the south side. The country rock is diabase, with some diorite schist, felsite and quartzite. The ore body is quite irregular in its boundaries and is weathered to gossan to the depth of six feet, since the mixture of pyrrhotite and copper pyrites very readily oxidizes to sulphates, which afterward afford oxides. Some of this rusty, porous ore taken from the upper part of the shaft by myself, assayed two dwt. per ton of gold and 38 dwt. (=59 grams) of platinum, showing a very valuable ore; and portions of the rusty sand show a long string of bright tin-white particles of Sperrylite when panned. Quite large pieces of native copper have been obtained from this ore body.[6]

[6] On the subject of platinum, its identification, sources of supply and separation of the ore, the following extract from a circular recently issued by Baker & Co. of Newark, N. J., will be interesting and instructive to prospectors:

The constantly-increasing demand for platinum in the arts and manufactures of the world, and the present limited sources of supply, have in recent years greatly enhanced the price of the metal. Because of the peculiar and valuable qualities of platinum it is believed that the consumption of the metal would be greatly increased if the supply was sufficient to materially lower the cost.

This circular is issued for the purpose of calling the attention of prospectors and miners to the increasing demand for the metal, even at present prices, and to the wide distribution of the ore, with the hope that by their aid new and rich deposits of the same may be located.

Contrary to popular impression, platinum and associated metals are widely distributed, although they have thus far been found in paying quantities in but few localities. This condition is perhaps largely due to the higher intrinsic value of gold and to the limited acquaintance of prospectors and miners with the means of identifying platinum ore and of its economic separation. Up to the present time the platinum of commerce has been obtained entirely from alluvial deposits, although it has been reported in limited quantities in situ. About eighty per cent. of the present supply is derived from the alluvial deposits of the Ural Mountains, but there are few, if any, of the gold-bearing gravel beds of the world that have failed to yield platinum, and it is more than likely that large quantities of platinum ore have been thrown away with the black sand washings from gold placer deposits. The distribution of the ore may in fact be regarded as practically coexistent with gold placer deposits, as is evidenced by the following list of localities, excepting Russia, that have yielded the ore in varying quantities. In California, in nearly if not all of the gold-bearing gravel and sands; in Oregon, Georgia, North Carolina, Alaska, on the Yukon river, Canada, British Columbia, Mexico, Colombia and Brazil, South America, and Australia.

The genesis of native platinum is not well understood. In two cases it has been reported as found in quartz veins, but these reports have never been verified, and the theory of deposition from solution based upon them is rendered extremely doubtful, by the known insolubility of the metal. The undoubted occurrences of platinum in situ are in Russia, Brazil, New South Wales, Canada and Colombia.

Platinum ore is usually found in the form of rounded or flattened grains or "sand," occasionally in irregular lumps of the size of peas; large nuggets are very rare—the largest as yet found weighing twenty-one pounds.

The ore has a metallic lustre and is distinguished by its steel gray color, shining light gray streak when rubbed on a hard white surface, high specific gravity (16 to 19) infusibility in the hottest blast furnaces and insolubility in any single acid. It is not affected by borax or salt of phosphorus before the blowpipe, except in the finely divided state, when reactions for iron and copper may be obtained. It is soluble only in hot nitro-hydrochloric acid (*Aqua Regia*).

Platinum ore is a complex body consisting of the metal in combination with varying proportions of the other members of the platinum group, such as iridium, rhodium, palladium, ruthenium and osmium, together with from four to 20 per cent. of iron. In alluvial deposits the ore is generally associated with iridosmine (a native alloy of iridium and osmium, possessing a degree of hardness superior to that of hard-tempered steel) magnetic iron sand, chromite, garnet, epidote and often with zircon, serpentine, ilmenite, peridoet

Shaft No. 2 goes to a depth of 35 feet, and it is said that diamond drill holes show 95 feet of ore to the southeast of it.

No. 3 shaft is on gold quartz, one seam appearing to be rich in free gold. A considerable amount of ore was treated in a three-stamp prospecting mill near by, and several thousand dollars worth of gold obtained[7]; so that the mine seems worthy of further development. It is to be hoped some settlement will be reached before long, so that this most interesting deposit may be put to use.

We walked west on the railway to Worthington to have a look at the nickel mine, now no longer working. Slate and felsite schist occur some distance east of the mine, and diabase, often rusty and gossan-like at the mine. There is no longer much to be seen on the dump. A tramway leads five miles westward from the station to the Chicago nickel mine, which however we had no time to visit, nor the gold mine a little this side of the enickl mine.

Nickel Mine at Worthington.

General Conclusions

In general one notes an important advance in our gold mining regions during the past year. The area known to be auriferous has been steadily extending in the older parts of the districts, and the new Michipicoton region has been added to those previously known. A large number of properties have been under development this year, much larger than ever before; so that we may expect shortly to have the value of many hitherto problematic properties settled.

Extending the area of the gold regions.

The production of gold has scarcely advanced as rapidly as was expected; but some of the predictions made a year ago were unduly inflated. The number of mines actually producing gold has largely increased, there being now three mines on Lake of the Woods, one on the lower Seine, two on the upper Seine and one in the Wahnapitae region whose mills are more or less steadily at work; besides the bromo-cyanide plant successfully in operation at Deloro in the Marmora region.

Gold Mills in operation.

It must be admitted however that several of these mines are producing ore of lower grade than was anticipated, and so have disappointed their owners. Nevertheless it is probable that all of them, with ordinarily good management and reasonable economy, can produce gold at a fair profit. One mine at work last year proved to have ore of too low grade to be treated successfully by a mill of the present size. Whether capital can be raised to equip it on a sufficient scale to give a fair margin for dividends is not yet certain.

Features and promises of the industry.

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quartz, diamond and chrysolite. Russia is the only country, excepting possibly New South Wales, that at the present time mines platinum ore for itself alone.

In the former country the platinum-bearing sand is found at depths of between six and forty feet, the "pay streak," averaging less than a foot in depth, resting directly on serpentine bed-rock. In New South Wales the "pay streak" is from 60 to 150 feet wide and underlies a loam bed 60 to 70 feet deep, the ore occuring in the crevices of the bed-rock and in the gravel resting thereon.

The method generally adopted for extracting the ore is to pass the sand and gravel with water through puddling machines or revolving conical screens; the platinum and fine sand pass through into sluice boxes beneath, while the coarser materials are discharged at one side. The contents of the sluice boxes are washed in the usual manner, and when gold is present in paying quantities it is removed by amalgamation with mercury, the platinum remaining behind. Experience shows that it is seldom profitable to work mines yielding less than three grams of platinum ore to the ton of gravel. The average yield of the richest Russian mines is about six grams per ton.

The refining of crude platinum is a difficult operation to perform and requires apparatus and experience not generally available.

As we are extensive buyers and refiners of platinum and manufacturers of the metal in all forms, we are most anxious to encourage the search for and the development of new sources of supply of the ore.

We have the best facilities for the correct assaying and refining of platinum ore and are purchasers at the highest market prices of the crude ore in either small or large quantities. We shall be pleased therefore to give additional and detailed information bearing upon this subject to such persons as are practically interested in this matter and to make tests for platinum, free of charge, on samples delivered f. o. b. at our works.

[7] Mr. B. Charlton's evidence in Rep. of Roy. Com. on the Mineral Resources of Ontario, p. 113. See also several other references to the mine.

Some of the experiences of the past year have shown how uncertain the results of a limited number of assays are in determining the value of a mine. As a rule the only satisfactory test is a mill run of as many tons of the ore as can be managed.

On the whole the conviction is being reached that in spite of a few fairly rich veins our gold ores are in general of low grade, though often present in amounts extensive enough to justify working on a very large scale. Fortunately all the properties developed except those of Marmora prove to have essentially free milling ores, so that the cost of treatment is reduced to a minimum. As roads and steamboat and railway connections improve, the cost of labor and supplies will fall; and ease of access, with a salubrious climate and safety for life and property, must give the region an advantage over most others. The presence of splendid water-powers in almost every part of our region will largely solve the question of cheap power, even if the present large supply of wood for fuel should be exhausted. It is probable that where water carriage is available the ore may profitably be taken to customs mills, like the new one at Keewatin on Lake of the Woods, particularly during the earlier stages of development, and thus prevent the risk of erecting stamp mills on properties the extent of whose ore deposits is yet unproved.

Our energies should be directed largely to lowering the expense of mining and treating the ores, now averaging perhaps not much less than $5 per ton; so that our large deposits of ore low in gold can be made to yield a profit. Some of the Alaskan mines, like the Treadwell, which in December treated 19,082 tons of ore at a profit, with an average product of only $2.37 per ton, should serve as examples in the economy of treatment on a large scale. It may be expected that immense masses of low grade ore, like some on the upper Seine and near Rat Portage, should be capable of treatment on the large scale and with as good profits as those of Alaska.

Importance of economic methods of treatment.

The Sultana mine with its new thirty stamp-mill will probably lead the way this year as in the past; but several other properties are rapidly coming to the front. While our advance in gold production has been less rapid than was expected, solid advance has been made, with the prospects of a well grounded and profitable gold mining industry in the future. That there have been some failures and will be others in years to come is only what may be expected, since this has happened in every gold region; but that the successes will be numerous and striking there is now every reason to hope.

Solid advance made.

British Association's Visit

At the close of the meeting of the British Association for the Advancement of Science, held in Toronto from August 18 to August 25, an excursion was organized to visit the Pacific coast via the Canadian Pacific Railway. One portion of the excursion, including most of the geologists and geographers, occupied a sleeping car which was dropped for one day each at Sudbury and Rat Portage, to give an opportunity to see something of the mineral resources of new Ontario. Dr. Dawson, Director of the Geological Survey, had general charge of this branch of the excursion, but the arrangement and direction of the two stops in Ontario were left to the present writer, as representing the Bureau of Mines.

Members of the British Association visit the Ontario mining districts.

A number of men of note in geological and mining circles belonged to the party, such as Professors Roberts-Austen and Le Neve Foster of the London School of Mines, Dr. Blanford, formerly Director of the Indian Geological Survey, Prince Krapotkin, Mr. Lamplugh of the British Geological Survey, and Professors Miers of Oxford, Penck of Vienna and Davis of Harvard.

The excursion was met by the mayor and prominent citizens at each place and most hospitable provision made for the comfort and interest of the guests. Short excursions were arranged at Sudbury to the well known Copper Cliff mine, to the McConnell nickel mine and to the Fairbank mine. An intended excursion to the Crystal mine was reluctantly given up because of the time required for the long drive to lake Wahnapitæ and back.

All the excursionists went to the Copper Cliff mine, by far the most important nickel mine in the world; examined the ores and the interesting eruptive contact of Laurentian and Huronian; and then went to the roasting beds and the smelting works. The distinguished metallurgist, Dr. Roberts-Austen, was particularly interested in this department. Afterwards the company divided into two parties, one going to the nickel properties in Denison township; the other going by rail and carriage to the curious anthraxolite deposits of Balfour and Fairbank townships, very interesting geologically if not of great importance economically so far as at present developed. Mr. Barlow of the Canadian Geological Survey accompanied the party and furnished valuable information from the geological side. In the evening the distinguished guests were entertained at a dinner, and expressed their thanks for the hospitality shown them and their sense of the importance of the nickel and other mineral wealth of the region.

In Sudbury district.

Most of the day spent at Rat Portage was taken up with an excursion by steamboat on Lake of the Woods, the well known Sultana mine being the first object of attraction; though stops were made at several islands affording interesting geological features, such as the agglomerates and schist conglomerates of the Huronian. A short excursion was made the following morning to the eruptive contact of Huronian and Laurentian near Norman and Keewatin. The excursionists were greatly pleased with the beauty and interest of Lake of the Woods, and appreciated the importance of the gold deposits of the region.

The Lake of the Woods district.

Notes on the Petrology of Ontario

By Dr. A. P. Coleman.

THE territory covered by the Province of Ontario is so vast and the amount of work done upon its petrology so small, that, along with the necessary attention to economic mineralogy, care has been taken during our field work to obtain specimens of all rocks promising to be of interest, and to investigate their field relations as far as possible. Some of the results of the microscopic examination of thin sections made from the hand specimens taken have been made use of in the general report on the work of the summer; but much of the material accumulated has been of too technical a character to be of real value to ordinary readers of the report, interested in the economic rather than the scientific bearing of the work. As the latter appeals to a quite distinct audience it seems well to make a separate report, including from year to year the points of more purely scientific interest. Only a small portion of the scientific work done in connection with the preparation of the report on the Gold Regions of Western Ontario will receive attention in the following pages however, since much of it consisted in the determination of rocks or minerals presenting no new or specially interesting features. On the other hand, numerous rocks and associations of rocks observed having sufficient scientific importance to deserve description, are taken up in the present report, beginning at the west of the Province and working eastwards.

The Grande Presqu'ile.

Some interesting rocks of rather doubtful age occur in the Grande Presqu'ile, and as this region was not explored in the interior by Lawson, and so has barely been touched on in his account of Lake of the Woods, it will be well to take up some of the more important examples here. The first point examined was Astron bay, on the northwest side of the peninsula. A band of dark crystalline rocks extends along the western shore from the middle of Astron bay to the south end, and rocks of the same kind extend inland as far as the southern end of Beaver inlet one or two miles to the west. The commonest facies of these dark rocks has the appearance of a medium grained diorite. Under the microscope the rock is seen to consist chiefly of plagioclase (oligoclase) with very low extinction angle, and hornblende with bluegreen and yellowish brown dichroism. The latter min-

Diorite.

eral is probably secondary after augite in many cases, though no augite was found. In addition to these minerals a little quartz and some orthoclase probably occur, and small amounts of biotite, magnetite (surrounded often with leucoxene), apatite and epidote are found. The felspars show a zonal structure and tend to be idiomorphic.

Rock between Diorite and Syenite.

A somewhat gneissoid rock from a point two or three miles west of the south end of Astron bay has a very similar appearance to the previous example, but under the microscope proves to contain a considerable quantity of untwinned felspar, so as to take a place intermediate between diorite and syenite. Large masses of reddish brown titanite occur in this section.

Hornblende Porphyrite.

A remarkable rock is found at the south end of Astron bay. In a medium grained gray ground-mass there are imbedded large crystals of very cleavable black hornblende, often showing octagonal outlines. The average width of these porphyritic crystals is about half an inch. On weathered surfaces the rock has a pitted look from the more rapid weathering of the hornblende crystals. Under the microscope the ground-mass is found to consist of quartz, plagioclase, augite and probably some orthoclase. The quartz contains many fluid cavities with bubbles, and also slender trichites. The plagioclase has a small extinction angle. The augite is somewhat idiomorphic, pale greenish in color, and is to a slight degree changed to green hornblende. There are also some large prisms of apatite in the ground-mass. The phenocrysts consist generally of a single, rather homogeneous individual of hornblende having a pleochroism of yellow brown, brownish green and blue green. In the interior of such hornblende individuals there are often a few remnants of augite, not unlike the augites of the ground-mass. There is a little brown biotite mixed with the hornblende. It is probable that the large hornblendes were originally phenocrysts of augite of a first generation, more given to rearrangement than the smaller augites. The rock as a whole is perhaps best described as a hornblende porphyrite, though it commenced as an augite porphyrite.

Pyroxenite.

Two specimens of a medium grained black rock from the south end of Beaver inlet, a mile and a half west of Astron bay, contain hardly any plagioclase and consist almost wholly of hornblende and augite, with some magnetite and apatite. The freshest has the augite in about equal amount with the hornblende. In the other the augite has been entirely changed to a chloritic mineral dotted with iron oxides. It seems probable that some of the hornblende is original, as it has now and then well defined crystal forms and shows no traces of enclosed augite. In other instances the hornblende is evidently encroaching on the augite. In the freshest section there is a little brown biotite. This pyroxenite resembles the rocks previously described from the same region, with the felspars left out, but it was not observed in connection with them.

Diorite Schist or Gneiss.

Several examples were collected of a very fine grained, gray, schistose rock resembling the Couchiching as defined by Lawson on the shores of Rainy lake. A microscopic examination shows only traces of granular structure and little or no mica; otherwise their appearance is like that of Couchiching gneisses. They consist mainly of oligoclase, orthoclase and hornblende, with a considerable amount of epidote and a little quartz. One section contains many cubes of magnetite. A specimen from the outlet of lake Kashegogamog has much the same character.

Porphyrite.

A handsome dark green porphyritic schist occurs at the contact of the Laurentian with the Huronian at Cross inlet, on the north side of the peninsula. The ground-mass is very fine grained and somewhat lustrous. It proves under the microscope to be made up of hornblende, chlorite, zoisite and epidote, while the large phenocrysts, though greatly weathered into zoisite, etc., have portions fresh enough to determine as plagioclase with a large extinction angle (24° to 40°) indicating bytownite or anorthite. The rock is no doubt a sheared porphyrite.

Port Coldwell Region.

A remarkable mass of eruptive rocks related to the syenites occurs on the north shore of lake Superior near Peninsula and Port Cold-

well, rising as magnificent hills immediately from the waters of the lake. A day was spent in a rapid examination of these rocks and the selection of specimens. Although some difficulties remain unsettled in respect to these rocks, a preliminary report may be made on them now.

Eruptive Rocks on the north shore of Lake Superior.

Syenitic looking rocks first show themselves at mile 808½ on the Canadian Pacific railway, about three miles east of Peninsula station. The rock here is coarse grained and almost black on fresh surfaces, but weathers to a reddish color or even to yellowish white. Four miles to the west red syenite, not quite so coarse in grain, mixes with the dark rock, probably being of later age. This variety of rock, sometimes turning gray towards Port Coldwell to the west, sends dikes into most of the other rocks of the region, and may be followed as far as Middleton (830 mile post) with some interruptions of dark, probably Huronian rock. Between Port Coldwell and Middleton the two rocks are about equal in amounts and greatly mixed. It is possible that the syenite and granite near Jackfish, 17 miles farther west, have some connection with this syenite area, though no direct connection was traced. As the Jackfish rocks have already been described in a former report[1] they will receive no further mention here.

Both the dark purplish syenitic looking rock and the red somewhat later rock are occasionally pierced with dikes of diabase, which is the latest rock of the region.

The dark rock, almost black when fresh, consists mainly of flat plates of felspar, mostly formed of two or three individuals twinned, but showing no polysynthetic twinning. The felspar strips are often a third of an inch in length and sometimes longer.

A microscopic examination shows that most of the felspar is entirely without striations, only small portions being striated, in the latter case having small extinction angles suggesting oligoclase as the felspar. Some parts of the unstriated felspar have little strips with a different extinction angle from the rest, somewhat microperthitic in appearance. In general the larger areas of felspar are not so greatly weathered as to destroy the evidence for twinning if it had ever existed. The untwinned parts, making up most of the rock, would have been looked on as undoubtedly orthoclase but for the high specific gravity (2.67). As orthoclase is nowhere stated to have a greater specific gravity than 2.58, this threw doubts on the determination, and suggested that an untwinned plagioclase was in question, the specific gravity found corresponding to that of oligoclase. A partial analysis made by Mr. W. W. Stull in the laboratory of the School of Science gave the following results :

SiO^2	65.62
Al_2O_3	20.32
Ca O	5.90

This corresponds most closely to the composition of a felspar just between albite and oligoclase.

The other essential minerals of the rock are augite and magnetite, the former making about a quarter of the whole. The augite is brown with greenish edges, though scarcely at all changed to hornblende, and is of later formation than the felspar, filling in spaces between the felspar individuals. Until a further investigation is made of the felspar the exact position of this curious rock must remain somewhat doubtful. Its structure suggests the ophitic on a very coarse scale, and, supposing the felspar to be plagioclase, the rock should be called diabase.

The red rock intimately associated with the dark rock just described has externally the character of syenite, though with considerable variations from point to point. A very characteristic specimen from the railway east of Port Coldwell is red speckled with black, and consists of what is most probably weathered orthoclase with pale sea-green augite, the latter partly turned to hornblende and magnetite. Another specimen from near by, dark red slightly flecked with black, turns out to be of an entirely different character under the microscope, showing a very pronounced pegmatite structure. Beside the intergrown quartz there is plagioclase, greatly weathered, and probably also orthoclase, with small amounts of hornblende and magnetite, probably resulting from the destruction of augite.

Augite Syenite.

[1] Bur. Mines Rep. 1895, p. 103, etc.

A somewhat fresher specimen contains very little quartz, and consists chiefly of oligoclase in more or less perfect crystals, hornblende and magnetite being the other important ingredients. An analysis of this rock was made by Mr. F. N. Speller, of the School of Science, Toronto, with the following results :

Diorite.

SiO^2	49.80
TiO^2	1.82
Al^2O_3	12.89
Fe^2O_3	18.19
FeO	.10
MnO	1.08
CaO	5.87
MgO	2.85
K^2O	.24
Na^2O	4.58
BaO	.28
H^2O	2.16
P^2O_5	.58
	99.94
Spec. grav.	2.91

The small amount of alumina and large amount of ferric oxide are very surprising, and it may be that some of the alumina was weighed with the iron.

Several examples just east of Port Coldwell are of a purplish or reddish gray color, with black crystals of hornblende. Some portions of the rock have the hornblende in long, slender crystals. Under the microscope the felspar, rather weathered, shows no twin striations, and the dark mineral is brown hornblende with a greenish border. The hornblende is only slightly dichroic, red brown and paler brown, and looks primary ; but one crystal contains a core of sea-green augite, suggesting that the original dark mineral was augite. In addition to these minerals much magnetite and apatite in slender needles are found.

Syenites.

At a few points darker gray rocks are associated with the reddish syenitic looking ones, and a thin section displays a different type in which considerable oligoclase is mingled with what appears to be orthoclase, and besides the brown hornblende there is much augite, sometimes enclosed in the hornblende, sometimes quite separate from it. Parts of the hornblende individuals have well defined crystalline form and have not at all the look of a secondary mineral.

Augite diorite.

Still other coarse grained gray rocks, as near Pic river, show a quite different habit, containing large scales of mica. Two were examined microscopically, and one of them joins closely to the previous rock in composition, consisting mainly of tolerably fresh unstriated felspar with a more decayed felspar interpenetrating it in which no twinning could be seen, and almost colorless augite with much brown biotite and magnetite.

A second thin section differs from this in having the felspar almost all plagioclase. Zonal structure is common, the center being the more basic, ranging in some cases from oligoclase on the outside to an acid labradorite within. Pale augite, brown hornblende and brown biotite in about equal amounts make up the rest of the rock. The augite and part of the hornblende are idiomorphic. Part of the mica has an unusual dichroism, orange red and grass green. A portion of the augite has the inclusions and parallel extinction found in hypersthene, but is not dichroic. The rhombic augite is always surrounded with irregular black rims, probably of magnetite. This rock shows no trace of ophitic structure, the felspars being short and stout, and is no doubt gabbro.

Gabbro.

It is probable that all the rocks described from this region are genetically related, and pass by gradations into one another. They stand on the whole between the syenites, diorites and gabbros, with extremes properly placed in each of these families of rocks, and intermediate members hard to classify.

Two other rocks of the region are entirely distinct. Specimens of two dark gray porphyritic rocks east of Port Coldwell show the diabase structure and seem to be dike rocks, probably later in age than the previous rocks, though this was not certainly proved. One of these contains many long needles of apatite, sometimes with dark cores, penetrating all the other minerals. Magnetite in square forms and also long black strips, probably of the same mineral, are common. Large, fresh, well shaped crystals of olivine are also found.

Olivine diabase.

The other rock has an ophitic ground-mass of plagioclase, augite, hornblende and magnetite, the hornblende being probably secondary. In this lie very large prisms of augite and plates of plagioclase sometimes half an inch wide. This rock may be called an augite porphyrite.

Augite porphyrite.

A compact dark gray rock with a pronounced amygdaloidal structure occurs five miles west of Peninsula, a few hundred yards north of the railway. Just what its relation is to the neighboring rocks is not clear, as they were not seen in contact. The amygdules resist weathering better than the mass of the rock, and so stand up on the weathered surface. The freshest section shows a very fine grained ophitic mass in which plagioclase, magnetite and hornblende can be recognized. The amygdules have a pale rim, largely of epidote and zoisite, and a darker centre of epidote and titanite with other undetermined minerals.

Amygdaloids.

Rocks near Missanabie.

A find of coal having been reported from Missanabie, north of Michipicoton where gold has since been discovered, the rocks in the neighborhood of that station were studied. The most interesting are certain diabase dikes in phyllite and mica schist. The supposed coal turns out to be a basic eruptive glass, black and vitreous in look. It proved impossible to make a section of it thin enough to be transparent. This glass forms the thinnest ends of branching dikes, or the edge of somewhat larger dikes, having a thickness seldom greater than half an inch.

Diabase dikes in schist.

Immediately against the glass the rock is exceedingly fine grained, as might be expected, and very opaque. Clear strips of plagioclase are embedded in an obscure ground-mass, perhaps devitrified glass, containing many black dendritic formations, probably of magnetite.

A little farther away one finds typical diabase, consisting of plagioclase strips in augite with some magnetite.

The glassy diabases are two or three miles west of the station. A short distance east of the station coarser diabase is seen in a cutting. Except for a small quantity of quartz it is very like the previous rock, and is of interest mainly from its habit of weathering into brown spherical masses.

The Wahnapitae Region.

A number of rock specimens collected by Dr. Bell from the Sudbury and adjoining regions were examined microscopically by the late Prof. George H. Williams, his results being published in an appendix to Dr. Bell's report on the Sudbury district,[2] and a few rocks from the Clear Lake region northwest of Sudbury were described by the present writer in 1893,[3] but in general the region has received little study from the petrographic side; so that it may be of use to describe some of the more important rocks collected last summer on or near lake Wahnapitae.

The eruptives examined are chiefly diabases and related rocks. A dike two feet wide on location WD66 is dark gray, fresh looking and somewhat porphyritic. Under the microscope it shows a typical ophitic structure, brown or purplish augite filling spaces between clean cut strips of rather basic plagioclase. A number of rather large olivine crystals occur, and there is much magnetite enclosed in other minerals. The adjoining country rock of a gold bearing vein is comparatively coarse grained, and proves under the microscope to be a badly weathered quartz diabase in which most of the felspar is changed to saussurite and the augite to hornblende with a little biotite.

Olivine diabase.

A very similar but fresher rock occurs near a hill of arkose on lake Kookagaming two or three miles to the west, with less quartz however. The plagioclase is labradorite and is not always in slender strips, but sometimes in stout crystals, so that the structure is about midway between the ophitic and the granitic.

A greatly weathered quartz diabase is found at the portage east from the Crystal mine, the quartz forming a rather coarse pegmatite structure with the felspar and filling in spaces as the last mineral to soldify. Most of the augite has been transformed to hornblende.

[2] Geol. Sur. Can., 1890-91, pp. 55, etc., Part F.
[3] Can. Rec. Science, April, 1893, pp. 343-6.

A reddish gray rock at the Crystal mine just east of lake Wahnapitae contains a very large amount of quartz, mostly arranged in a roughly "graphic" way. The felspar, about equal in amount, is so far weathered as to make identification uncertain. Some of it appears to be plagioclase. Much of it has distinct crystal form. A small amount of green biotite and some chlorite occur also. The rock is no doubt a plagioclase granite or quartz diorite.

Granite.

A very interesting group of clastic rocks is found in the Wahnapitae region, including quartzites, arkoses, graywackes and impure dolomites. Several of the arkoses are quite granitic in general appearance, flesh red and massive looking; others approach the quartzites. Several outcrops of arkose were examined. One of them, from the Sheppard gold mine on the south shore of lake Wahnapitae, has been described by Prof. G. H. Williams,[4] who refers to it as a felspathic sandstone or quartzite, in which "angular or subangular quartz grains that have undergone some secondary enlargement, are mingled with felspar which is changing, though it has not yet entirely changed to a sericitic ground-mass." Some of my sections show less change, perhaps being from fresher hand specimens. The quartz grains are usually fairly well rounded and little, if at all enlarged, while the felspar present in about an equal amount is granular also, and though somewhat weathered is distinctly recognizable as orthoclase, microcline and oligoclase. Except secondary sericite, no other mineral can be distinguished. The specimens just described come from the shore.

Arkoses.

Specimens taken from the small workings on the brow of a hill one or two hundred yards inland are different in character, being more granitic in look and containing well formed crystals of arsenopyrite, simple and twinned. A section made from one specimen might easily be taken for a granite. With crossed nicols there is hardly a trace of granular structure, the whole section being formed of interlocking minerals, but the general appearance suggests somewhat the mortar structure, larger individuals being sometimes surrounded by a fine mosaic of small quartz and orthoclase individuals. Close examination shows however that many of the larger masses have been enlarged with fresher materials of the same kind. The fresh extensions of plagioclase tend to have wider twin lamellæ than the original mineral, though alike in extinction angle; and these extensions sometimes show a zigzag edge, each twin lamella appearing to end independently of its neighbors. This is observed only where the felspar abuts upon an area of clear quartz. There is much secondary muscovite present and a small amount of some carbonate. Prisms of rutile also occur.

It is probable that my sections present the two extremes of little modified and greatly modified arkose, while Williams' section stood midway between.

Thin sections from a high hill on the southwest side of lake Kookagaming show well rounded quartz grains and a few tolerably clear grains of microcline in a sort of groundmass of decaying felspar.

The graywackes are of considerable variety, running from compact flinty or slaty rocks to conglomerates. Some of them might easily be taken for compact massive rocks, but for the occasional pebbles of a similar gray color or more rarely of a red granitic rock which they contain.

Gray-wackes.

Under the microscope they are seen to consist of a very fine paste of clayey or silicious material with angular fragments of quartz, or of rocks of various kinds, the latter often more recognizable with the naked eye than under the microscope. The granitic looking pebbles are sometimes quite large and are very prominent from their different color. A section of one such pebble proves to be of weathered plagioclase granite or quartz diorite.

There are all transitions between the slaty rocks and graywackes and dolomites, the latter usually containing many angular fragments of quartz as well as chlorite and other secondary minerals. Frequently well formed rhombohedra of dolomite lie in a confused ground-mass of dolomitic and argillaceous material.

Dolomites.

[4] Appendix to Dr. Bell's Rep., No. 28, p. 69 F.

Clastic Huronian Rocks of Western Ontario

By Dr. A. P. Coleman.

Introduction

THE ROCKS of western Ontario have been more or less carefully examined by several geologists, such as Bigsby, Bell and Dawson, but the first detailed mapping of the region was done in 1883 and succeeding years by A. C. Lawson, who laid an excellent foundation for the future study of the Lake of the Woods and Rainy Lake districts[1] Since then adjoining districts have been mapped by W. H. C. Smith and W. McInnes, and special portions have been studied by H. L. Smyth, Winchell and Grant, and the present writer. The general conclusions reached by Lawson have been commonly accepted by those who have followed and will be made use of largely in the present paper, though most of the facts employed have been observed by the writer while engaged in field work for the Bureau of Mines.

Results of previous work in the region

Lawson describes the region as wholly Archean, and divides the rocks into two parts—a lower one, the Laurentian, and an upper one, the Ontarian, further subdivided into the Couchiching and the Keewatin. The term Laurentian is used here in a petrographic sense, to denote a series of entirely crystalline, generally acid rocks, especially coarse grained gneisses and granites, in spite of the fact that these rocks have an eruptive contact with the overlying series, and so are later in age than the Ontarian.

Classification of the rock series

The Couchiching rocks, found chiefly in the southern portion of the region along the boundary of Minnesota, consist in general of monotonous gray or brown mica-schists and gneisses, sedimentary in origin.

The Keewatin, which overlies the Couchiching where the latter is present and in other cases rests on the Laurentian, is largely composed of eruptives and their products—schists resulting from shearing, ash rocks, and agglomerates—basic in the lower part, acid in the upper[2]

Lawson does not definitely correlate the Couchiching with either the Laurentian or Huronian, but Van Hise includes at least part of it in the Basement Complex[3]. Lawson puts the Keewatin doubtfully with the Huronian, pointing out numerous differences between it and the original Huronian as described by Logan. In general however Canadian geologists do not hesitate to class these altered eruptives and the accompanying sedimentary rocks as Huronian, and this usage will be followed in the present paper.

In the first place the Huronian clastics will be briefly described, and afterwards the relations subsisting between the series of rocks and their causes will be discussed. The term Archean will be used to include both Laurentian and Huronian (or Ontarian), though according to the classification adopted by the United States Geological Survey the latter would be included in the Algonkian.

Huronian Clastics

As to origin, the Archean clastic rocks of western Ontario are of three kinds—pyroclastics, autoclastics, and sedimentary rocks proper.

The pyroclastics, consisting of agglomerates, ash rocks, etcetera, are of great extent and importance, but have no special bearing on the subjects of this paper, and so need no extended description.

Pyroclastic rocks

[1] Geo. Sur. Canada, 1885, p CC ; and 1887, p F.

[2] Geol. Sur. of Can., 1887, p. 22, F., etc.

[3] Principles of pre-Cambrian Geology, p. 782.

It is probable that some rocks mapped as agglomerates are really autoclastic, especially those including fragments sharply angular in form and all of the same kind. These angular blocks of rock could hardly have been hurled into the air as bombs. Lawson mentions transitions between agglomerates and true conglomerates with waterworn pebbles, which might readily occur where volcanic materials drop into the sea.

Autoclastic rocks.

The autoclastics are not very extensive and will merely be mentioned. They are produced by the action of crushing and shearing forces in rocks above the level where pressure produces plasticity, and so give a hint as to the original depth of the rock beneath the surface. The best examples known to me, omitting the eruptives already mentioned, are the limestone breccias of Steep Rock lake and certain conglomerates to be seen a mile west of Fort Frances, where in the sharp folding of thin beds of sandstone between layers of schist the latter has yielded plastically, while the former was broken to fragments now embedded as pebbles in the schist.

Ordinary clastics.

The ordinary clastics, true sediments, are of special interest as giving clear ideas of the conditions of the time, and so will be described more at length than the two previous groups. The Keewatin, though very largely of eruptive origin, contains important sedimentary members, and the Couchiching is wholly sedimentary.

Keewatin Rocks.

Water-formed clastics. Limestones.

The water-formed clastics of the Keewatin are of great variety, including limestones, slates, quartzites, grits, graywackes, breccias, and pebble and boulder conglomerates. The limestones are however of limited extent, being found in any thickness only at Steep Rock lake, 70 miles east of Rainy lake, where there is a small area differing both petrographically and structurally from the rest of the region. These limestones have a very modern look, being scarcely at all crystalline in appearance, having cherty layers in gray limestone at some points and black, very carbonaceous beds at others. One almost expects to discover fossils in them, but none have been found. They have been folded in an extraordinary way into an anticline and syncline having their axis inclined 60° or more.[4]

Slates.

The slates are widespread, passing often into phyllites. Many of them contain carbonaceous matter, and some examples have a graphitic look and soil the fingers. One of them, from an analysis by Dr. Adams, was found to contain 7.44 per cent. of carbon, and is porous as though hydrocarbons had volatilized leaving round cavities.[5] These carbonaceous slates may be compared with the black slate of the Sudbury region, in which Dr. Ellis has found 6.8 per cent. of carbon, and which was at one time bituminous, as shown in Balfour township by a large vein of anthraxolite, once no doubt a fluid or plastic petroleum product.[6]

Graywackes and Conglomerates.

The widespread graywackes need only be mentioned, since they present no points of special interest, and the same may be said of the somewhat unusual quartzites and grits, but the conglomerates are of more importance. They are found in many localities, but only one example will be taken for description, that of Shoal lake, more thoroughly studied than the others because occurring close to a number of gold-bearing veins. As seen on the shore of the lake, it is a schist-conglomerate consisting of green chlorite as a matrix, with well rounded pebbles of all sizes up to two feet in diameter embedded in it. That this portion of the conglomerate has undergone shearing is shown by the flattening and even tailing out of some of the softer pebbles, and the breaking and shifting of the parts of some of the harder ones. The commonest rock species in the pebbles are quartz-porphyry and porphyrite, felsite and green schists indistinguishable from adjoining Keewatin schists. In addition, there are fragments of black and red quartzite and of white, pulverulent sandstone, of vein quartz and of anorthosite. No gneiss or granite has been found after careful search, though some

[4] H. L. Smyth, Geology of Steep Rock lake. Am. Jour. Sci., vol. xlii, 1891, pp. 317-331.

[5] Geol. Survey of Canada, 1885, pp. 58, 124 and 150, CC.

[6] Ontario Bureau of Mines Report, 1896, p. 159, etcetera.

quartz-porphyries having the crystals of felspar and dihexahedra of quartz much crowded, look at first glance very like granite. Most of these pebbles are easily matched by Keewatin rocks, sometimes however many miles distant; a few are evidently Couchiching, and none are Laurentian. One rock, a quartz-porphyry, half made up of beautiful spherulites having feathery intergrowths of quartz and felspar, has not hitherto been recognized in Ontario.

Two or three miles north of Shoal lake and some distance across the strike the rock becomes much less schistose, has a coarse grit as matrix, and might almost be described as a breccia, since many of the pebbles are scarcely rounded. The pebbles are however of the same rock species as those on the shore of the lake.

This band of conglomerate is at least 16 miles long and two miles wide. Its thickness can hardly be less than a mile, and may be almost double that, since the dip is steep; but a covering of sand prevents very accurate measurements of the width. A very similar conglomerate appears on the east shore of Upper Manitou lake, 50 miles to the north, containing porphyry, felsite, quartzite, etcetera, and a fine example is found at Rat Portage, the matrix in this case however being sericitic instead of chloritic. Numerous other instances are found in various parts of the region. No pebbles which are undoubtedly Laurentian have been reported from any of them, though granite boulders are found, as, for example, near Abram's rapids, north of lake Minnetakie. They resemble closely eruptive granites piercing the Keewatin in neighboring localities, and differ in appearance from the characteristic granite of the Laurentian.

Couchiching Rocks.

The Couchiching rocks are all formed of sand, or clayey sand more or less metamorphosed. The least changed were found by the writer on the shore of Rainy river a mile below Fort Frances, and at the Scramble mine near Rat Portage. They form thin beds of yellowish or brownish soft sandstone lying between micaceous and chloritic schists. Under the microscope, besides grains of quartz, there are particles of magnetite and numerous small prisms, probably of tremolite. In general however the Couchiching consists of biotite schist or gneiss, the quartz showing a clastic origin. Some of these schists contain sillimanite; more rarely they appear as thoroughly crystalline gneiss containing muscovite, microcline, etc., resembling the adjoining Laurentian and forming transitions towards it.

Composition of Couchiching rocks.

The Couchiching includes no coarse clastics, and is nowhere separated from the underlying Laurentian by a basal conglomerate. These rocks have been mapped by Lawson, Smith and McInnes as covering extensive areas in the southern part of the region. Rocks of a similar kind occur on Manitou lake, near Lake of the Woods and at other points, but have not being separated in the mapping.

Relation of the two Classes.

Lawson suggests that the Shoal Lake and other conglomerates represent the base of the Keewatin, and so indicate an unconformity between the Keewatin and the Couchiching;[7] but the finding of many Keewatin pebbles in the conglomerates opposes this view. A striking evidence that the break represented by these conglomerates comes high up in the Keewatin instead of at its base just above the Couchiching is to be found at Shoal lake, where a few boulders of coarse-grained anorthosite found in the schist conglomerate are exactly like portions of a boss of anorthosite two miles away. As this anorthosite area contains masses and strips of characteristic Keewatin schist swept off during its eruption, it is evident that an immense lapse of time separates the conglomerate and the underlying Keewatin, long enough for a coarse-grained plutonic rock to solidify, probably at considerable depths, and then for the region to be so profoundly eroded as to provide pebbles of the plutonic rock on a seashore. It is probable that the Keewatin conglomerates which have been referred to represent an important interval of erosion, perhaps equivalent to the

Evidence of unconformity.

[7] Geol. Survey of Canada, 1887, p. 84, F.

one shown to exist by Van Hise and others between the upper and lower Huronian in the States to the south.[8]

Nevertheless the striking difference in the character of the rocks of the two series, wholly sandy sediments in the Couchiching, largely diabase and porphyry and the products of their alteration in the Keewatin, shows that conditions have greatly changed before the later series was formed.

It must not be assumed of course that all of the eruptives found in the Keewatin were surface flows of the same age as the enclosing rocks. Many of them are probably of the nature of laccolitic sills like the trap sheets in the Animikie near Thunder bay. In fact, but for the undoubted pyroclastic rocks among the sediments, one might suspect that most of them were injected between the sedimentary beds perhaps at a much later date, since no amygdaloidal varieties have been found. In a region where there has been so much folding and shearing it is rash to make positive statements on such matters, however.

Lawson estimates the thickness of the Keewatin at about five miles,[9] and of the Couchiching at about the same ;[10] but W. H. C. Smith suggests for the latter that there may be a number of closely oppressed folds not easily separated, so that the thickness of the Couchiching may be very much less, though still reaching 8,000 to 9,000 feet.[11]

Evidence of Compression

Following Lawson's estimate, the two series together sum up to 50,000 or more feet in thickness, though it is probable that the lowest beds of the Couchiching have been dissolved by the molten Laurentian rocks beneath, since no basal conglomerate has been found ; and also that there has been a considerable amount of compression during the squeezing undergone in the sharp synclinal folds, as proved by the flattening of soft pebbles in the conglomerates.

The Couchiching, containing some little consolidated sandstones, can scarcely be included in the Laurentian ; and as it forms transitions to rocks recognized as Keewatin, and lies conformably so far as observed beneath the latter, there seems no reason why the two together should not be classed as Huronian.

The Huronian of western Ontario presents, then, an immense series of shallow-water sediments, in the upper part mixed with eruptives, perhaps largely later injections, but partly pyroclastic ; the whole equal in magnitude to the thick series of clastics found in the preparatory troughs of great mountain ranges, such as the Appalachians and the Rockies.

Laurentian and Huronian.

Field relations of the two great series

The field relations of the Laurentian, Couchiching and Keewatin have been so admirably shown by Lawson that only a brief summary will be required here. He was struck by the fact that the lower Archean "occurs in large, isolated, central areas more or less completely surrounded by the schists of the upper Archean, the encircling belts anastomosing and forming a continuous meshwork."[12]

An examination of the Rainy Lake region, where the innumerable bare shores of islands and promontories give an unsurpassed exposure of the Archean, shows that the Laurentian consists chiefly of coarse reddish, often porphyritic rock, usually granite in the central part of the area, but showing foliation towards the margin where it comes in contact with the Huronian. The foliation of the gneiss is generally parallel to that of the schist beside it. Before the actual contact is reached one generally sees strips and fragments of the Huronian embedded in the gneiss, sometimes sharply angular, at others with softened outlines. Often the actual line of contact is hard to define, so mixed are the gneiss and the schist. Dikes of granite, pegmatite or felsite generally run from the gneiss into the Huronian. Where the latter is Keewatin one usually finds it hardened into hornblende-schist instead of the more common chlorite-schist. The Couchiching rarely shows much contact metamorphism, though occasionally garnets and staurolites are developed.

[8] Journal of Geology, vol. i, No. 2, p. 120.

[9] Geol. Survey of Canada, 1887, p. 55, F.

[10] Ibid., pp 101 and 102, F.

[11] Ibid, 1890—'91, pp. 54 and 55, G

[12] Geol. Survey of Canada, 1887, p. 142, F.

The Huronian schists have almost always a steep dip away from the gneiss, seldom less than 45° and often verticle, and are folded into sharp synclines.

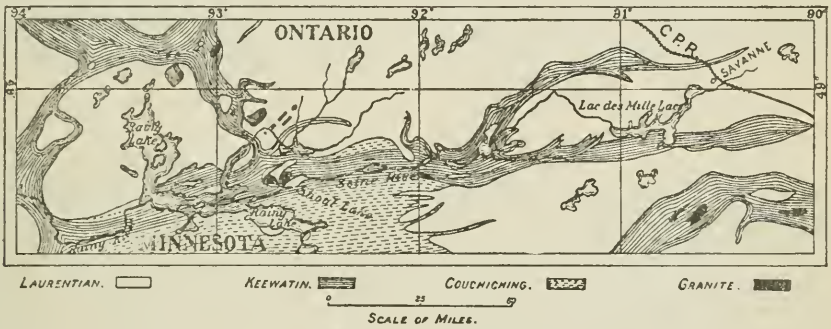
Areas of Laurentian

The areas of Laurentian are of all dimensions from a mile or less in diameter to a width of 50 miles or perhaps even more, and are usually rounded in form. Good examples of the larger Laurentian areas are found in the one including the north arm of Rainy lake, nearly 50 miles long from east to west and 25 wide; and in the Grande Presqu'ile of Lake of the Woods, 30 miles in length from east to west and 18 wide. Of the smaller areas mention may be made of Sultana island a few miles from Rat Portage, famous for its gold mine. Here a boss of coarse prophyritic granitoid gneiss a mile in length by half a mile in width presents the same eruptive contact with the green Keewatin rocks as one finds around the larger masses. Another similar boss of coarse Laurentian, having penetrated both. It is however not always easy to say whether a given rock is Laurentian or a later granite, and it is likely that the two are connected in origin and might be arranged as a consecutive series. Both Laurentian and other granites send off felsitic dikes into the adjoining rock, and in this way one may often discover the proximity of a gneiss or granite area a quarter of a mile before reaching the contact.

It is worthy of note, as observed by Lawson, that often the gneiss grows darker and more basic near the contact with basic Huronian rocks, as though some of the latter material had been incorporated in the underlying Laurentian.

Map showing the rock relationships

The accompanying map will illustrate the geological relationships just mentioned. It has been pantographed from three map sheets issued by the Canadian Geological Survey—the Rainy Lake, Seine River, and Shebandowan sheets—the



Geological Map of part of Western Ontario.

Laurentian granite was found by the writer at Caribou lake, east of the lower end of lake Manitou, the area being only about a square mile. Examples of intermediate sizes may be found on the Canadian Geological Survey's maps of the region.

Finer grained granites, generally showing no foliation on the edges of the areas, are common also both in Huronian strips and in the Laurentian; and many more small knobs and bosses than were mapped by Lawson in his somewhat hurried work will be found from time to time, such as the area of protogine containing so many gold-bearing veins at Shoal lake. So far as known, these granite bosses are later than both Keewatin and work of Lawson, McInnes and Smith. As the scale is small and the lake and river systems are complicated, it seemed wise to omit much of the topography so as not to confuse the geological boundaries. The portion mapped includes on its western side one of the most characteristic batholitic areas, though tracts to the north and west would serve equally well as illustrations if the geological sheets covering them had been published.

Only a few of the granite bosses are mapped, many being too small to be conveniently shown.

Evidently this well glaciated Archean peneplain presents a most instructive section

through the base of an ancient group of mountains. The sharp synclines of Couchiching and Keewatin nipped in between areas of gneiss and granite are merely remnants preserved because of their protected position. Often unfinished curves may be seen running out into the Laurentian, erosion having eaten below the bottom of the part that has vanished. Imagining these roughly circular or oval synclinal folds complete, we should see convex surfaces forming domes of diameters varying from one mile to 50 miles. What their height was in their prime one can hardly guess ; but from their diameter and the steep dip of their synclinal portions one may suppose that the largest of these pre Cambrian mountains were comparable with the greatest mountains of the present day.

Sections through Pre-Cambrian Mountains.

The process by which they were built seems to have differed from that of later times in the earth's history, since they were not constructed of a series of parallel anticlinal folds, but were pushed up more like the laccolitic mountains described by Gilbert and Whitman Cross from the western United States, though with the difference that the up-pushing mass of molten rock was broad based.

While the larger areas of gneiss and granite are evidently batholites, some of the smaller granite bosses may be stumps of old volcanoes, though they could not have furnished the acid pyroclastics of the Keewatin through which they rise. Lawson looks on the Shoal Lake anorthosite boss as the stump of a volcano furnishing basic pyroclastics.[13]

Rock History of the Region

Reviewing the facts presented by the rocks of western Ontario, we find an oldest series, the Couchiching, consisting of sands and clayey sands deposited on a sea bottom, since entirely destroyed. The adjoining land must have presented an abundance of quartz-bearing rocks to furnish so many cubic miles of sand. After at least a mile and a half and probably five miles thickness of these sands had been laid down in the southern part of the region, the second or Keewatin series began, in which great eruptions of basic and acid rocks alternate with clays, grits, and conglomerates, the latter sometimes a mile thick. It is probable that an important break in the series is shown by the conglomerates. During the later part, if not the whole of the time we may suppose that organisms existed, furnishing the large percentage of carbon found in some of the rocks. Ultimately the sinking sea bottom was loaded with an eight or ten miles thickness of sediments and eruptive materials, as in the geosynclines preparing the way for later mountain ranges, and the slowly rising isogeotherms softened or fused the foundation, which rose into domes, the inner parts solidifying as granite, the outer more viscid portions having their constituents dragged into rough parallelism with the adjoining solid rocks and forming gneiss.

Great thickness of the formations

Comparison with other Regions.

The usual theory of mountain-building, by lateral thrust due to the sinking in of the earth's crust to conform to the shrinkage of the interior through loss of heat or of volatile constituents, seems capable of producing only folds ; and it is doubtful if thrusts in two directions at right angles to each other could produce anything except more complex forms of the same kind. The formation of irregularly placed domes demands some other cause.

Batholites and Laccolites

One naturally compares these batholitic[14] mountains with the laccolites so distinctly brought before the world by Gilbert in his description of the Henry mountains of Colorado. There also there are oval domes, though not over three or four miles in diameter. Larger but more irregular ones are described by Whitman Cross from the adjoining western States. It is evident however that these cake-like masses of eruptive rock resting on their undisturbed floor of stratified rock differ greatly from the Rainy Lake mountain stumps, which are only more elevated portions of the general substratum of gneiss on which the sedimentary rocks now rest.

[13] Geol. Sur. of Canada, 1887, p. 57, F.

[14] Bathylite is the form of the word preferred by Dana and Zirkel.

C. P. R. bridge across Magpie River, Tote-road bridge in the foreground. Photograph by Willmott.

Rapid on the Magpie River, about 25 miles from its mouth. Photograph by Willmott.

View on the Magpie River. Photograph by Miller.

Gorge at second portage up the Magpie River. Photograph by Willmott.

Falls at mouth of Magpie River. Photograph by Miller.

Second Falls on Magpie River. Photograph by Miller.

Sand beach at lower end of Hawk Lake, at the efflux of Hawk River. Photograph by Miller.

Wawa Landing on Michipicoton River. Photograph by Willmott.

The eruptive masses described by Dawson from the Sweet Grass hills of northern Montana, tilting up "the previously horizontal beds of the plains,' so that those immediately surrounding the igneous masses rest at very high angles,[15] seem more nearly related in general structure, and the same may perhaps be said of the extraordinary "plutonic plugs" described by I. C. Russell as pushing up the strata into domes in the Black Hills of Dakota.[16] Probably some of the bosses of granite described in works on geology are of the same character, though many of them have a different relationship, pushing or fusing their way through overlying strata without becoming schistose themselves nor doming up the beds above.

The dome of the Black Hills, as represented by Russell [17] seems to come closest to the batholitic domes of western Ontario though the section across the Black Hills, copied from Newton and Gilbert, differs greatly from them in some points. As shown diagrammatically, the relatively small central plug of granite is surrounded by a wide band of vertical schist, on whose edges rests the dome of sedimentary rocks, as though there had been two upheavals, separated by a wide interval, during which the later sediments of the dome were deposited. The size of the Black Hills dome is greater than that of the west Ontario batholites studied up to the present, and the time of the latest uplift much more recent.

Gilbert suggests for the laccolites that the ascending flow of molten rock rises only until the overlying rock is less dense than itself, when the latter is pushed up into a dome, the general law of hydrostatics being obeyed.[18] Whitman Cross, following Dana, does not accept the hydrostatic theory, thinking that the force which set the lava in motion is sufficient to account for the facts.[19] I. C. Russell suggests "that uplifts which owe their origin to the intrusion of a molten magma into the rocks beneath them be termed subtuberant mountains. They may be fancied to originate from the growth of a tuber within the earth's crust."[20] He thinks that the cooling and therefore contracting crust of the earth brings pressure to bear on the hotter interior, squeezing upward the molten rock, which may either form domes without reaching the surface or come to the surface forming volcanoes.[21] Suess thinks that eruptives of this sort cannot elevate the rocks above, but, on the contrary, can only occupy spaces already prepared by tensions in the earth's crust.[22]

Cause of these Mountain structures.

Some of the methods referred to are obviously inapplicable to the batholitic type of mountains. Russell's suggestion of upwelling lavas urged by squeezing action of the earth's crust can hardly be brought to bear on a region where the whole solid crust for thousands of square miles has been tossed into irregular domes. In fact it is difficult to see how any outside force can be applied in such a way as to elevate domes 50 miles across when the earth's crust adjoining is itself plastic. We seem compelled to look for some force inherent in the masses themselves. If we look at the conditions we find that the granites of these batholites were probably fused hydrothermally, but not excessively hot, since blocks of basic Huronian rock, readily fused by a dry heat too low to melt granite, often lie in them with unrounded edges. Even at a relatively low fusion point they must have been much hotter and hence (potentially) lighter than the unfused rock above, particularly when the latter was basic like most members of the Keewatin series. This relatively light silicious magma probably not thoroughly liquid, but only plastic, following the laws of hydrostatics crept upward where the load of overlying rock was smallest, the heavier Huronian beds meanwhile set-

Objections to the theories of origin.

[15] Geol. Sur. of Canada, 1882-'83-'84, p. 17, C.

[16] Journal of Geol., vol. iv, no. 1, p. 23, etc.

[17] Journal of Geology, vol. iv, No. 2, p. 183, etcetera. I have been unable to obtain a copy of the "Geology of the Black Hills" in time for use in preparing this paper.

[18] Geology of the Henry Mountains, Washington, 1877, pp. 72 and 95.

[19] Laccolitic mountain groups of Colorado, Utah and Arizona-Washington, 1895, p. 241.

[20] Journal of Geology, vol. iv, No. 2, p. 189.

[21] Ibid, pp. 190, 191.

[22] Antlitz der Erde, vol. 1, p. 218, etc.

tling slowly into synclines between the rising batholites. The process may be conceived to have gone on very slowly under sufficient load to prevent violent disruptions of the overlying strata, since a certain plasticity of the beds is shown by the shearing observed, especially among the softer pebbles of the conglomerates.

The large porphyritic felspars observed in many of the gneisses and granites suggest two stages in the history of these rocks—an earlier one, before the ascent began, and the later slow consolidation. Augengneiss around the margin of batholites proves that the crystals existed before the shearing uprise was complete.

Some of the laccolites described by Gilbert show suprisingly perfect unbroken domes of stratified rock, and the same is true of the domes elevated by plutonic plugs; in both cases due, as suggested by Gilbert, to there having been load enough to prevent disruption. The amount of stretching undergone by the arched strata in the instances described was however not very great.

In the case of the larger batholitic domes of western Ontario the extension must have been as a rule much greater. The Grand Presqu'ile dome may have been comparatively low and flat, since a dip of only 24° may be observed in Huronion schist resting on gneiss at the south of the batholite, and basic schistose rocks found in its interior west of Astron bay are perhaps remnants of the upper parts of the low arch of the dome.

In other cases where the dip of the schist is very steep or sometimes even tilted a little under the edge of the batholite, it is probable that the dome was much higher, and the stretching of the overlying strata must have amounted even to miles in large domes like that of Rainy lake.

Extent of the Batholitic Region.

The region whose geological history has just been sketched extends from Lake of the Woods on the west to Lac des Mille Lacs on the east, a distance of more than 200 miles, with a width north of Rainy lake of 120 miles. Most of this large extent of country shows the mesh structure in a more or less typical way, though toward Lac des Mille Lacs on the east the bands of Huronian tend to become parallel, suggesting an approach to the more normal folded mountain structure. Throughout this whole region the Laurentian has eruptive contacts with the Huronian, and nothing like a basal conglomerate of the Huronian can be found.[23]

In North-Western Ontario.

It would be unwarranted perhaps to suggest that the relationships described are normal for the Archean, especially when relatively only a small portion of the immense extent of the Canadian Archean has been mapped with any detail, yet in a considerable number of instances similar relationships have been found.

Dowling maps imperfect mesh-like strips of Huronian about areas of eruptive gneiss and granite from the district of Keewatin,[24] 80 miles north of Lake of the Woods, and Barlow states that the underlying gneiss has an eruptive contact with the Huronian in the Sudbury region 500 miles to the east of Lac des Mills Lacs. Dr. Bell however appears to differ from this view, explaining the relation of the two series of rocks, at Wahnapitae for instance, by assuming a fault.[25] My own observations near Sudbury and Wahnapitae convince me that at those points the contact is eruptive, since dikes of pegmatite, etc., may be seen passing from the gneiss into the green Huronian rocks. The loops so characteristic of the Huronian further west are however to be seen only indistinctly, if at all, on Bell's map of the region. Adams and Barlow show the

In Northern Ontario.

[23] Van Hise (Pre-Cambrian Geology, p. 786) follows Symth in speaking of the Steep Rock Lake series as resting with a characteristic basal conglomerate on the eroded edges of the Basement Complex; but my own observations show this to be no except on to the general rule. The gneissoid granites which enclose the series form eruptive contacts with the Keewatin at the Harold Lake gold mine a few miles west of Steep Rock lake; and Smyth himself (Am. Jour. Sci., vol. xlii, 1891, p. 322) in describing the supposed basal conglomerate states that it contains large pebbles of quartz and greenstone, but mentions no gneiss or granite pebbles.

[24] Geol. Survey of Canada, 1894, part F.

[25] Ibid, 1890-'91, p. 14 F.

same relationships between the Hastings and Grenville series of eastern Ontario and the underlying Ottawa gneiss,[26] and Adams maps similar curving bands of the Grenville crystalline limestones sinking into the gneisses below, in his report on the Laurentian area north of the island of Montreal.[27] These two series are probably the eastern equivalents of the western Huronian, the Grenville series having undergone a more intense metamorphism than the usual Huronian. The conglomerates found by Adams prove that these rocks were undoubtedly of sedimentary origin.

In Eastern Ontario.

Still farther east, in the great Labrador peninsula, Lowe describes crystalline limestones and garnetiferous graphitic gneisses forming bands in the Laurentian, though his evidence as to the relation of the ordinary Huronian to the underlying Laurentian is not so conclusive. He recognizes in some of the mica-gneisses sedimentary beds like Lawson's Rainy Lake Couchiching, but in other places speaks of Huronian rocks as resting unconformably on the Laurentian, though in some cases they are more or less interfolded with the Laurentian.[28]

In the Labrador peninsula.

On the other hand, according to Van Hise, Logan's original Huronian, north of the lake from which it got its name, seems to be of later age than the underlying Laurentian, since he finds basal conglomerates or breccias containing fragments of Laurentian rock at two localities.[29] Barlow, who has examined the same region, thinks however that there also the contact is eruptive.

In Logan's original Huronian.

From Van Hise's admirable "Principles of North American pre-Cambrian Geology" one finds that a conglomerate of the Huronian rests discordantly on the foliated edges of the Basal Complex at many points south of lake Superior,[30] and Dr. Dawson informs me that characteristic Huronian beds rest on an eroded Laurentian surface in New Brunswick.

It may be that at more southerly points the thickness of the Huronian series is considerably less than in the typical Archean region, and hence that the floor on which the sediments rested was not softened or fused, as happened farther north. On the other hand, it is not impossible that in the states south of the lakes rocks of a somewhat later age, resting on the upturned edges of the Archean (including the Rainy Lake Huronian) have been looked on as Huronian. Van Hise includes mica-schists, green schists, etc., of Lawson in the Basement Complex on whose eroded edges the Huronian is supposed to rest.[31] As it seems generally assumed that distinctly clastic rocks, such as the little altered Couchiching sandstone of Rainy river, should not be referred to the Laurentian, it might be well for a small party of American and Canadian geologists interested in these questions to go over certain typical regions together, so as to come to a common basis of classification for these difficult formations.

The need for more careful study noted.

However it may be in other regions, there is certainly a very large area in northwest Ontario in which the relations between batholites of granite and gneiss and the schistose rocks of Huronian (Ontarian or Algonkian) age are as described in the present paper. Tens of thousands, if not hundreds of thousands, of square miles of the western Huronian were once afloat on a plastic granitic magma which swelled into great bubble-like mounds, while the colder surface rocks tended to sink into the spaces between; and a phenomenon of such wide extent deserves careful study, whether the explanation given above be correct or not.

It is worthy of note that in several regions where ancient sediments were supposed to rest discordantly on the Fundamental Complex more detailed study has proved that the contact is eruptive. The latest instance is described by R. A. Daly, who finds batholitic gneiss pushing through overlying mica-schist in New Hampshire.[32]

It is probable that wherever sediments accumulate to a thickness of 40,000 to 50,000

[26] Am. Jour. Sci., vol. iii, March 1897.

[27] Geol. Survey of Canada, 1895, part J.

[28] Geol. Survey of Canada, 1895, part L., p. 196, etc.

[29] N. Am. Pre-Cambrian, 1896, p. 777.

[30] Ibid., p. 784.

[31] Pre-Cambrian Geology, p. 782.

[32] Journal of Geology, vol. v, No. 7, p. 694, etc

feet the beds on which they lie become plastic if not fused, shift their place to correspond to the load, and form eruptive contacts with the rocks above. As this has taken place beneath every great mountain range, perhaps aided by relief from pressure under anticlines, and is no doubt still taking place where preparations are being made for the great mountain chains of the future, a so-called Fundamental Complex is to be regarded, not as characteristic of great antiquity, but as resulting from a certain set of conditions which may exist at any age. The older mountain ranges, having been more deeply eroded, give an opportunity to study these gneissic and granitic cores, while in later ranges they are still buried out of sight. It is likely however that a basal section through our present mountain ranges would show long bands of gneiss and granite rather than approximately circular batholites, such as we find in western Ontario.

A probable cause of eruptive contacts.

If the supposition just made be correct, areas of the Laurentian or Fundamental Complex do not represent the earth's *erstarrungskruste* but are merely portions of the earth's crust, of sedimentary or other origin, which have been buried deeply enough for hydrothermal fusion and have afterward been disinterred by long continued denuding forces. Good examples of wide areas of granitoid rocks, merging at many points into gneiss and having an eruptive contact with the overlying rocks, are to be found, according to Dr. Dawson, in the Coast ranges and Interior plateau of British Columbia,[33] but here the Basal Complex is of Jurassic age.

Concluding Observations.

It will be observed that the term Laurentian has been employed in this paper as Lawson and other Canadian geologists are accustomed to employ it, in a petrographical and structural sense for crystalline gneissic or granitic rocks underlying the Huronian. That these rocks have consolidated at a later time than the Huronian is evident, and therefore they have not the position in time which Logan supposed when the name was given. It may be advisable to provide another designation for these widespread rocks, which occupy the same position structurally and are formed of practically the same materials as to the south whose attitude with reference to the Huronian corresponds to Logan's original Huronian.

Position of the Couchiching series in geological time.

How much of the 2,000,000 square miles of the Canadian Archean presents the same relationships as have been described in this paper, and how much shows the orthodox unconformity between Huronian and Laurentian can be determined only by careful field work. If the eruptive contact is the normal type and the Huronian which rests discordantly on the Laurentian turns out to be really later in age than Lawson's Ontarian, we must look on the Couchiching series as presenting the oldest known rocks. This would carry back the ordinary sedimentary deposit of sands and clays to the beginning of known geological time.

[33] Geol. Survey of Canada, 1886, part B., and 1894, part B.

Geology of Base and Meridian Lines in Rainy River District

By William Arthur Parks B A

Introduction

UNDER instructions received from the Director of the Bureau of Mines I left Toronto on May 15, 1897, and joined Mr. Niven at Ignace on the 17th. By canoe route through a chain of small lakes to the north we were enabled to reach our in itial point, the intersection of the third base line with the fourth meridian. on May 21. This meridian was continued northward from this point until June 12, a distance of about 32 miles. From five miles south of the railway to five miles on the new line the country rock is granite and is succeeded by a narrow strip of gneiss and mica schist which passes into an area of gneissoid granite extending to about the 28th mile, where it enters Huronian rocks.

On June 14 we left this line and by way of the English river and the chain of lakes to the east reached Sturgeon lake and began the base line to the westward from the 120th mile post on the Thunder Bay boundary line on June 21. This line traverses Huronian rocks for about six miles, when it enters a Laurentian area which continues to the intersection of the fourth meridian, where it enters another Huronian belt which it follows to the 64th mile post.

On July 29 the camp was moved to Dinorwic and work was begun on the fifth meridian on July 31. I remained in Dinorwic to examine the Ruby mine and rejoined the party on August 2.

The fifth meridian traverses a Huronian belt for about six miles, then five miles of granite, beyond which it re-enters the Huronian and continues in it to a point about half way between the base line and the boundary of the Lac Seul Indian Reserve.

By way of Pelican lake and the Wabigoon river the party arrived at Dryden on September 18, and I was able to report in Toronto on Monday, September 20.

In all about 166 miles of lines were run, and throughout this distance I succeeded in examining the country for about two mile on each side of the line. The results of these investigations are herewith given.

Many small and nameless lakes occur along the surveyed lines, and for the purpose of identification these are indicated by numbers on the accompanying map.

I desire to express to Mr. Niven and Mr. Neelands my thanks for assistance afforded me during the summer, and to Professor Coleman for numerous kindnesses during the preparation of this report, more particularly the determination of many of the rocks described.

General Geology

Preliminary work from Ignace.

The country in the immediate vicinity of Ignace is well covered by a mantle of glacial deposits, but about half a mile north of the town the land reaches a somewhat higher level and outcrops of granite of a coarse nature are numerous. Beyond this elevation the land rapidly falls to the level of lake 2, the entire shores of which are composed of the same rock, which however presents in places a slightly gneissoid aspect with a nearly vertical dip; this is particularly evident to the south of the railway westward one-half mile from the town. According to Mr. Cobb of Ignace this granite area is succeeded by slate (?) about five miles to the south, near the contact of which he has located some deposits of auriferous quartz. The stream flowing from lake

2 takes a northeasterly direction with a considerable fall in its first stretches and an extremely tortuous river bed beyond. To the westward the granite crops out at an elevation of 100 feet above the portage and a high ridge with N. and S. direction occurs about half a mile to the east, continuing northward to the shores of lake 3. On the west side of this lake the exposures are numerous and high, with inclusions of binary granite and large masses of felspar; in places this granite shows some schistosity, dipping 20° southwardly and striking N. 80° E. A short creek connects lake 3 with lake 4, the bed of which is choked with boulders, rendering it difficult to find any rock in situ. On the northern side of this lake and a little to the west is a high hill presenting beautiful exposures of granite, porphyritic in places with crystals of quartz four and five inches in diameter. Eastward one mile from the line the country is much rougher, with precipitous cliffs traversed by veins of binary granite.

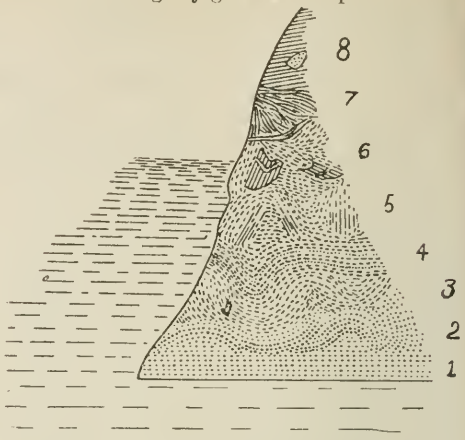
Fourth Meridian Line.

Mr. Niven's survey began at a point nine miles north of Ignace and three-quarters of a mile east of Indian lake, at the intersection of the fourth meridian line and the third base line, and the fourth meridian was carried due north a distance of 30 miles to a sheet of water named Thirty-Mile lake. My work on this line began on Indian lake, which I explored to its outlet into Bear lake, making frequent cross-sections of the country eastward to the meridian line.

Exploration of the Fourth Meridian Line.

The passage into Indian lake from lake 4 is broad, with little or no current, and its banks present glacial accumulations for the most part. Immediately on entering Indian lake high precipitous cliffs of granite occur, and this rock continues to the point at the northeast corner of the lake, while the line traverses similar territory to the shores of Victoria lake, so named from having been discovered on the 24th of May. Throughout this area the most noticeable feature is the occurrence of ridges running N. E. and S. W., forming the axes of most of the points stretching into Indian lake and determining the direction of the small streams. These ridges also are noticeable from the fact that they become hornblendic and slightly gneissoid in places.

Indian and Victoria lakes.



Contact of gneiss and granite on Indian lake.

At the previously mentioned point in the N. E. angle of Indian lake the granite passes into gneiss by a fairly clearly marked series in which the following eight zones were distinguished, the numbers corresponding to the figures in the accompanying diagram.

Granite merges into gneiss.

(1) At water's edge, ordinary gray granite with some thin seams of quartz striking N. 30° W.

(2) Slightly contorted granite passing imperceptibly into the above, only apparent where weathered.

(3) Distinctly laminated as to the mica, with large segregations of pure white quartz not seen anywhere in the granite area.

(4) Still granitic, but showing a tendency to cleave by horizontal planes into strata about two feet thick, with strong lamination at the partings.

(5) Containing fragments of distinct gray gneiss, shading imperceptibly into the ground-mass.

(6) Containing fragments of gneiss not shading into the ground-mass; gneiss cracked and filled with strings of granite, also the gneiss drawn out in bands into the granite.

(7) Extremely gneissoid and much contorted, the laminae running in all directions and being filled in with granite.

(8) Gneiss with inclusions of granite.

North and east of this point numerous exposures of gneiss were found throughout the course of the river into Bear lake. This connecting river is about a chain wide at the narrowest point, where however it is flowing with great velocity and forms two magnificent cascades with a total fall of about 25 feet, necessitating two portages of 10 chains each. The line passes into this area of gneiss immediately to the north of Victoria lake; where however the above described succession of rocks is not observable, but a series is presented of which the following are the more noteworthy in the mile and a half of line between Victoria and Bear lakes.

Indian to Bear lake.

(1) Fine grained mica schist; strike N. 70° W.; dip 10° S. 20° W.

(2) Coarse pink gneiss, laminated W.S.W.

(3) Summit of ridge, mica schist and interlaminations of coarse contorted pink gneiss.

(4) Large area of gneiss laminated W. S. W. and filled with masses of granite, around which the gneiss presents a marked flow structure.

(5) Lesser summit at 5th mile post.

(6) Hollow with some exposures of magnificent graphic granite.

(7) Light and dark gray mica schist interlaminated.

(8) Depression, fine gray gneiss.

North of Bear lake are some exposures of coarse gneiss, but both to the east and to the west of the line areas of undoubted granite occur passing by imperceptible degrees into the gneiss for the most part, but occasionally presenting a sharp contact. Some considerable elevations occur in this region with precipitous walls of 100 feet, notably to the east of lake 8. North of this lake is a minor height of land separating Bear lake waters from those of Elephant lake. Near the 10th mile post a prominent ridge of pink and gray gneiss crosses the line N. E. and S. W. Two miles west of this point the ridge reaches a much higher level, overlooking lake 10, and affording a view of a long stretch of low lying country to the westward. Lake 9 is rock-bound nearly all around, some granitic rock appearing but gray gneiss predominating. After passing the 14½ mile point the rock is much less gneissoid, while the granitic appearance is more pronounced. However throughout the whole region from Bear lake to the diorite belt south of English river the granite and gneiss are in places extremely hard to distinguish. In the map these Laurentian gneisses and granites are colored alike, but a rough line of separation might be drawn N. E. and S. W. crossing the line at 14½ miles and constituting by no means a sharp division, as almost imperceptible gradations are apparent at many points on both sides of the line. For a large part of both areas the term "gneissoid granite" would be most appropriate.

Bear lake to the height of land.

Lake 11 presents high rocky shores of granite cleaving N. E. and S. W., strewn with boulders of gneiss, granite and quartzite and disposed in a series of parallel ridges N. E. and S. W. on the flanks of which occur some streaks of mica schist. The granite in this region crops out in numerous small hillocks and rises in a few places to a considerable height the greatest elevation occurring two miles east of the 14th mile post, whence a long vista of low-lying country is visible to the north, east and west. The line enters lake 12 over an extremely rough granite slope and the same rock is well developed all around the lake, as also on lake 13 which is practically a bay of Flying Loon lake—at least it is so considered on some maps, although separated by a considerable stretch of river. On the west of lake 13 the rock is rather gneissoid and of considerable elevation, with mica schist and streaks of quartz. The waters of Elephant lake enter this lake through a channel which does not seem to be cut in the solid rock, but which is lined with boulders over which the water rushes with great violence; a well used portage of a few chains in length connects the two. The shores of Elephant lake are granitic, as far as my limited opportunity of observation extended.

In a granite belt to Flying Loon lake.

North of Flying Loon lake the country is comparatively level, with many large muskegs and only occasional rock exposures. At about the 22nd mile post the line enters a belt of diorite which bends off to the southwest from that point, an actual contact being found 50 chains west of 21½ miles. Following this belt eastward

Diorite north of Flying Loon lake.

it is found to become finer in grain and finally to pass into diorite schist, and appear, as such on the shores of Flying Loon lake. One-half mile before impinging on the lake it presents a high cliff facing the lake in which occur many segregations of quartz.

The line passes out of the diorite at about 18 chains in the 24th mile, and although the contact is covered in a swamp on the line, it can be found both to the east and west and presents much contortion and small faulting.

From this point northward and beyond English river the gneissoid granite is again prominent, covered with swamps and traversed by winding streams flowing for the most part westward. The next change is at 24 miles 50 chains, 1½ miles west of which point a hill rises to the height of 150 feet, the bottom of which is gneissoid granite but the summit is composed of an extremely fine grained diorite which is separated from the granite by a band of pink quartzite, owing its color to numerous small garnets. From this point the contact turns off to the northwest. This belt crosses the line at 25 miles 20 chains and exhibits in many places an east and west schistosity and constitutes a narrow belt 15 or 20 chains wide followed by the characteristic gneiss, which is succeeded by a narrow fringe of hornblende granite on the south shore of lake 14. This shows a sharp contact with the gneiss to the southwest, while a deposit of coarse diorite with pink felspar and pyrites occurs at the southwest end of the lake and disappears in that direction in a morass. North of this lake the hornblende granite continues for about 10 chains, when it passes into gneiss running N. E. and S. W., the country in the vicinity being well covered with drift accumulations and filled with small ponds. A ridge of fine grained diorite crosses the line N. E. and S. W. at 26 miles 50 chains, and a quarter mile to the westward becomes schistose N. 50° E. and dipping 40° S. E. For two miles to the west no exposure could be found, so well is the district covered with soil and boulders of diorite and gneiss. This dioritic belt rises into a ridge at the 27th mile post and falls into a large swamp by a steep declivity.

Gneissoid granite and fine grained diorite.

North of English river to end of the line.

Beyond this swamp appear the Huronian strata represented by a rock of a hard, compact nature, a sort of altered porphyrite presenting a schistosity N. 55° W. and a jointage S. 45° W. dipping 25° S. E. The laminated structure is well pronounced, but is variable in direction and shows considerable contortion and flow structure in places. This rock crops out at many points on both sides of the line, but the area in general is of a swampy nature; a large cedar swamp crossing the line at 70 chains in the 28th mile and extending for some miles to the eastward, being bounded to the north by a ridge of the above rock crossing the line at 20 chains in the 29th mile. The long, tortuous river shown in the map crosses just west of this elevation, is fairly navigable and seems to be an Indian canoe route. It was followed down by a party of men and found to enter the English river. Judging by the volume of water it is the outlet of some important lakes, possibly of Long lake, as shown on the map.

The above mentioned ridge shows to the westward more of the nature of a glacial deposit, and recrosses the line at 37 chains in the 29th mile with the river just beyond. North of the river is another parallel ridge of boulders of somewhat less elevation, showing no rock in situ.

A fine grained dioritic or hornblendic schist is found in situ to the east of the 29th mile post, but its limits are impossible to ascertain, as the country is well covered and gently rolling to 37 chains in the 30th mile, where a sharp rise occurs of about 75 feet, apparently all drift; but at one point a dark schistose rock striking N. 75° W. was found in position.

To the northward the soil is thin and exposures are more frequent, consisting of the above mentioned dark compact schist with seams of quartz following the jointage divisions rather than the planes of stratification, thus testifying to their later origin.

For some distance east and west of the line the formation rises into rounded hills with good exposures, the rock becoming more schistose and greener in color. One-half mile west of 30 miles 30 chains is the southern end of lake 15, whence a creek flows out to the southeast. The eastern shore is

low and swampy, while the western is higher and shows the characteristic schist, the last exposure of which south of Long lake was observed at 31½ miles. As the country north of this point is strewn with boulders of gneiss, a sharp outlook was kept for an outcrop of that rock, which was finally found on a ridge at 31½ miles with laminae N. E. and S. W. This was followed to the shore of lake 16, but no actual contact was found owing to the swampy nature of the country. No further exposures were met with south of Long lake. But as east of the line Huronian rocks occur on the shore, it is extremely doubtful where the exact contact lies. According to Professor Coleman in the Report of the Bureau for 1895, Huronian rocks constitute the entire eastern shore of lake Minnietakie. Therefore it is evident that the tongue of Laurentian rocks which, with the exception of a portion of the south-east shore, surround Long lake must come to an end somewhere to the southwest; the probable line of contact is indicated on the map.

Canoe route to Sturgeon Lake.

In ascending English river from the point crossed by the line three portages of about 10 chains each are necessary to gain access to Flying Loon lake. This river is of considerable size, being four and five chains in width and broken by a large number of falls, which owing to the large volume of water are of considerable beauty and offer some danger to canoe navigation, although many of them can be run by experienced canoemen.

Ascent by way of English river.

The northern shores of Flying Loon lake are gneissoid, while the large diorite belt before mentioned impinges on the west side. At the portage into Otter lake Huronian schists again occur in the form of hard siliceous schists of a dark color, with strings of quartz interlaminated with similar rock filled with large epidotized crystals of felspar, the whole presenting a strong east and west lamination with felsite and hornblende and mica schists with iron pyrites. This rock continues along the shore of the river and some distance south on Otter lake, the gneiss however cropping out about where the canoe route turns eastward towards Hut lake, the northern shore of which presents exposures of the schists, as also the portage into Pine lake. Through Pine lake, White Rock lake (so called from a large isolated mass of quartz said to contain copper pyrites) and Young's lake, owing to the necessity for direct travel, I was unable to make any detailed examination, but am of opinion that the schists constitute the prominent rock of the region. Towards Young's lake the portages are all short and the whole chain constitutes an ideal canoe route, which terminates by a half mile portage into Sturgeon lake. This ridge though not presenting any considerable elevation represents the height of land separating the drainage area of Sturgeon lake from that of lake Minnietakie; both of which however find a common level in Abram's lake, the former by the Sturgeon river to the north and the latter by Abram's falls to the south.

Sturgeon lake is a magnificent sheet of water, with a length of probably 30 miles, the sunrise over which on June 18, with its setting of dark green shores and artistic touches of rosy clouds, constituted an impressive scene of vastness, beauty and solitude. On the west shore of Sturgeon lake and on the adjacent islands green schists occur, but seem to be interlaminated with an extremely altered light green diorite or diabase, which latter rock becomes more pronounced behind the old Hudson's Bay Post where some prospecting has been done, an account of which will be found in the economic portion of this report. These schists, as observed on a small island where we were forced to take shelter for a day owing to the high winds from the northeast, are found to strike N. 50° E. and to joint N. 8° W. with a dip of 10° N. W., and to become sericitic where the boundary line between Rainy River and Thunder Bay strikes the north shore..

Around Sturgeon lake.

The boundary line between the Rainy River and Thunder Bay districts was run seven years ago by Mr. Niven. It was found to be quite open and no difficulty was experienced in following it except for the last few miles, where a forest fire has made it less distinct. The schists continue on this line, but are broken by a boss of eruptive granite ris-

Northward on the Rainy River and Thunder Bay boundary.

ing into a hill of about 75 feet and forming the west and south shores of lake 18. From this granite area to the intersection of the base line extend a series of schistose rocks consisting of diorite schists, hornblende schists and felsite schists of various colors interlaminated with altered diorite or diabase and porphyrites, the whole forming a series of troughs striking east and west, with a dip about 20° southward and tending to cleave into rhomboidal blocks with numerous small seams of quartz.

Fourth Base Line.

The survey of the fourth base line was commenced about seven miles north of Sturgeon lake, at the 120th mile post of the boundary line between the districts of Thunder Bay and Rainy River. This latter line was run by Mr. Niven in 1890, starting on Sewell's base line (west from the northwest angle of the township of Strange) at a point about two miles north of Hunter's island. The fourth base line was surveyed due west from the boundary line a distance of 90 miles to the intersection of Niven's sixth meridian.

Westward on Niven's Fourth Base Line.

The small lake (No 20) near the starting point of the fourth base line on the Thunder Bay and Rainy River districts boundary presents exposures of the previously described schists on its shores, and they extend about a mile north of the line, becoming distinctly hornblendic and compact at that point and containing a band of quartzite about four feet thick, bounded on each side by eight inches of crystalline quartz. In about a quarter of a mile gray Laurentian gneiss follows with N. and S. ridges and E. and W. lamination, forming the major part of the shores of lake 21 with schists on the southern bay only.

On the line between one mile 50 chains and one mile 53 chains a ridge crosses, running S. 58° W. on the east and S. 20° W. on the west, containing crushed granite and a dike of pyritous diorite rising to considerable elevations southward, with exposures of diorite and hornblende schist. At two miles 56 chains a thin belt of diorite crosses the line, becoming very schistose eastwardly and passing imperceptibly into the country rock, while to the north its contact bends west and passes about 10 chains north of the line in a northwest direction and is followed by a hard, fine grained schist with inclusions of coarse diorite, while the Laurentian contact approaches to within 30 chains of the line.

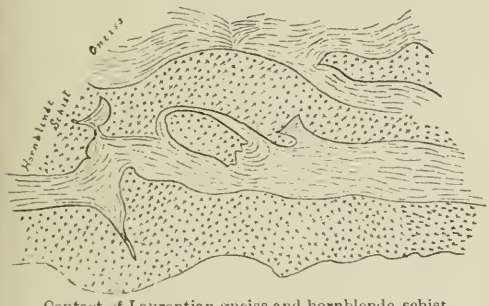
North of four miles 28 chains the rock is most fantastically contorted, the fine and coarse diorite being twisted in all directions with the clastic schists, continuing north to the contact just south of lake 22. A diorite belt reaches a considerable elevation on the line at six miles 15 chains, presenting a lamination N. 50° W., and just beyond the Laurentian contact sweeps southward, crosses the line and bends to the east, constituting with a hornblendic aspect in places a large part of the shores of lakes 24, 25 and 26.

Lake 23 is enclosed in the schists, which are dioritic in places, and the stream westward is about one-half chain wide and navigable only in short stretches; near its outlet into lake 24 it falls a few feet over broken boulders of Huronian origin. This lake is doubtless in connection with lake 25, which flows out to the westward by a short creek traversing a bed of boulders, mostly gneiss, overlying hornblende gneiss in situ; while this rock crops out to the south of the passage and appears to reach a greater elevation in that direction. Lake 26 is rock-bound, while lake 27 is an old beaver pond, with evidences of the work of these industrious animals forming a belt two or three chains wide around the entire lake, the water of which flows west, though its destination was not determined. This whole region is an intensely metamorphosed tract in which numerous dioritic bands representing periods of injection play an important part. Gneiss continues to lake 28, on the west side of which it is underlaid by a coarse pink quartz-diorite. This rises from the gneiss to an elevation of 15 feet south of lake 29 and continues to 10 miles 2 chains where the gneiss again comes in. Lake 29 flows into lake 28, which has an outlet to the southwest into Lake of Bays, the channel at the outlet being steep and rock-bound with both gneiss and the above mentioned quartz-diorite in evidence.

Schists, diorite bands and gneisses.

Gneiss forms the shore of the large lake called by Mr. Niven the Lake of Bays, being a short translation of an exceedingly long Indian name signifying, "The lake which one may enter at any point and find a bay directly opposite." Mr. Williams of Lac Seul informed me that this lake forms a part of a canoe-route connecting Sturgeon river with Sturgeon lake. Just before reaching the lake the rock interlaminated with hornblende schist reaches a considerable height, affording a view of 10 miles to the north and west.

Lake of Bays to Thirty-Mile lake.



Contact of Laurentian gneiss and hornblende schist.

In the accompanying sketch is shown the contact between the gneiss and hornblende schist north of the line. This latter rock occurs in considerable masses, and as the gneiss for the most part contains fragments of it and shows flow structure conforming to the lines of contact it must be of later age.

West of the Lake of Bays the rock is more generally covered and exposures are few; on lake 32 however some outcrops of gneissoid granite occur, and to the west of Dominion lake is even more granitic, cropping out in rounded hummocks at various points both north and south of the line, and on the line at 20 miles 60 chains, 21 miles 10 chains, 22 miles 30 chains.

A very large muskeg with flat clay floor stretches from 21 miles 40 chains to 22 miles 60 chains, and extends for six or seven miles northeast and southwest with occasional islands of granite. The country rises and the granite comes out strong just west of this depression, and presents a more schistose structure, N. 60° W., on the shores of lake 35; but between lakes 35 and 37 it is distinctly fine grained and granitic, while beyond it is more gneissoid and rises into ridges tending northeast, reaching its greatest elevation near the shore of Long lake where it attains a height of 150 feet, affording a magnificent view of Long lake and the country for 20 miles to the north. The gneiss extends around the northern end of the lake where it assumes a somewhat different aspect, being fine grained, red and most distinctly schistose. The contact with the schists of Huronian age is again found about one mile north of the point where the line cuts the western shore of this lake, and the immediate contact is a fine grained black schist passing into diorite a little beyond; strike N. 40° E., dip 40° N. 50° W. This line of contact crosses the line at 27 miles 40 chains and comes out on Thirty-Mile lake in a series of fine quartzites and hydromica schists, with veinlets of quartz and a narrow belt of diorite all much contorted and broken. On the west side of the lake the rocks noted are fine laminated felsites with a little mica, and in some places still finer with blebs of quartz. The country to the southwest of this lake is more covered and the exact contact with the gneiss not determinable. The previously described belt of schists on the fourth meridian forms the southeast shore of Long lake and passes into the gneiss on the last of the chain of small islands shown on the map, where, as on the shore opposite, the contact is marked by alternate belts of hornblende schist and white and red felsite and quartzites, showing much contortion and shearing.

West of Thirty-Mile lake a belt of diorite occurs at 31 miles 40 chains and is interlaminated with an extremely altered porphyrite passing into agglomerates. These rocks present on the weathered surface the appearance of a fine grained matrix, with whitish inclusions and veinlets of quartz. With numerous bands of diorite this rock contiues and forms the shores of lake 39, on the west side of which it is extremely agglomerate-like, while to the northeast it reaches a higher level. The shores of lakes 40, 41 and 42 present much the same character. South of the line, just west of lake 42, the rock shows no trace of dioritic belts, but rises into hills of 100 feet showing a stretch of burnt country to the west, south and southeast.

Agglomerates, diorite and sericite schists.

West of lake 41 the country is low and a large swamp stretches to the southwest; while to the north and east across the narrow stream from lake 42, through a most difficult country to traverse, are found some high hills presenting a view of 10 or 15 miles of burnt country with green ridges beyond to the northward. Near the line on the shores of lake 43 are some fine examples of sericite schists with cubes of pyrite passing into the harder schists and interlaminated with them, N. 35° E. This lake flows out at the south through a large marsh, while its shores rise on the west side into a ridge of agglomerates interlaminated with some sericite and followed immediately beyond by a deep valley. Various stringers and interlaminations of quartz are found in this neighborhood. On the north side the rocks assume the character of coarse clastic schists with a little sericite, the latter apparently in strings etc. in the other rock.

The south and southeast sides of lake 44 are low and swampy, but northward on both sides they rise to greater heights, notably on the west side where a hill of diorite of 150 feet forms an imposing centre, on approaching which around the north end of the lake a coarse agglomerate with striated inclusions is met with. From the summit of this hill the country is found to be burnt to the north, northeast and southeast as far as the eye can see, but is green to the west and southwest. The burnt belt seems to be about ten miles wide, stretching north 10° west and south 10° east. The high bare hills shown on the map bear N. 10° E. from this point. This large hill of diorite is flanked on the west by ridges of the same rock of somewhat less altitude, followed by dark green hornblendic schists. Lake 45 is an extremely picturesque sheet of water flowing into lake Mininetakie, in reaching which from the line bands of pronounced agglomerate with belts of diorite are met with, while on the shores a fine chloritic schist with crystals of calcite and a green hornblende schist are common.

Around Abram's lake.

One and a half miles north of 39½ miles the Laurentian was again encountered, presenting a granitic aspect at first but becoming more gneissoid beyond. This observation holds true for the whole of this line of contact to where it crosses the line some miles west of Big Vermilion lake.

On Abram's lake south of the line to the falls the rocks are for the most part dark hornblendic schists and green schists with veinlets of quartz. From the line to the outlet of Sturgeon river slates (?) and soft sericite schists occur striking N.E. with vertical dip, showing bands of much altered diorite and some pyritous shales. On the west side of this arm the rocks are as a rule harder and highly silicious schists, with some hydromica schists on the bay next the passage into Pelican lake. Southward from Abram's falls (the passage from Minnietakie into Abram's lake) are fine green schists succeeded by a narrow strip of diorite and hard dark schists with a few veinlets of quartz. The southwest point of the lake and the west shore is composed largely of dark schists passing into agglomerate, with bombs of six and eight inches of quartz diorite and other rocks. A narrow belt of the soft sericitic variety occurs at some points apparently associated with a fine white schistose quartzite. The above mentioned agglomerate crops out on the small island crossed by the line and on the other adjacent to it.

Pelican and Vermilion lakes.

The south bay of Pelican lake is largely of dark fine grained green schists. In the second bay of this lake the rocks are fine green micaceous and quartzose schists with pyrite, rising into a bluff of considerable height known as the Sioux Lookout, notable as being the site of the last battle between the native tribes and their powerful enemy from the south. The shores northward from this point are practically of the same nature until they reach the Laurentian contact near the outlet of Vermilion river, at which point fine granitic and felisitic bands occur, all much contorted but becoming distinctly gneissoid at the head of the bay. The waters of the Vermilion lakes enter Pelican lake by the Vermilion river, navigable throughout but for two portages of about a chain each; the first occurring where the water first leaves Vermilion lake in a beautiful fall of about 20 feet over a vertical bluff, and the second about half way down,

where a short rapid breaks the stream, easily passed however by canoes at the season of high water. The water of this river is beautifully clear, the faintest ripple mark being easily seen in the sand at a depth of six feet, and at its outlet into Pelican lake it presents a marked contrast to the much dirtier water of the latter.

The north shore of Pelican lake was found to be composed entirely of gneiss, and the same rock forms the entire boundary of Lost lake, presenting bands of granitic and felsitic matter in places, and inclusions of rose quartz and belts of dark mica schist.

The rocks on Vermilion river are extremely fine grained dioritic schists, and dark gray highly silicious schists, with numerous veins of quartz.

On Vermilion lake to the north occur diorite belts, with quartz at the contact with the country rock. Being engaged in examining the shores of Pelican and Abram's lakes I did not follow the line between Pelican and Vermilion lakes, but through the kindness of Mr. E. Neelands I obtained specimens of rock from various points along the line and found them to be in no way different from those previously described.

The two lakes 48 and 49 near the intersection of the fifth meridian are entirely surrounded by rocks of a similar nature, while at the point of intersection occurs the southern limit of a considerable belt of diorite stretching N.E. and S.W. and rising to a hill of 100 feet north of lake 49, where it is capped by a fine hard schist with schistose diorite on the flanks. This elevation seems to represent an eruption of diorite which has carried up with it a portion of the rock through which it found its way. West of this hill there occurs an area of mixed green and white rock, apparently crushed quartzite with or without a chloritic or hornblendic coloring ingredient, crumpled with belts of diorite and crushed granite.

Vermilion lake to the Sixth Meridian.

At about 61½ miles are 30 or 40 feet of a quartzose schist with much magnetite, causing a local variation of the magnetic needle of 33° E. This is followed to the south by diorite and more rock of the same nature.

Fifth and Sixth Meridians.

To the north of lake 50 the nearness of the Laurentian rock is shown by hard laminated quartzose rocks with mica schist and granite, while on the west of the same lake a hill of diorite marks the last of the Huronian rocks, which is followed by some felsites and finally the Laurentian gneiss. This continues with no break to the intersection of the sixth meridian and down the same past Pelican lake. At the third portage out of this lake on the Pelican river a mass of mica schist was observed, but the actual contact with the Huronian of Dryden and vicinity was not found, as the passage down was made in haste and for the most part at night. Some remarks on the surface conditions of this Laurentian area will be found in the part of this report devoted to Surface Geology.

Sixth Meridian Lines.

In the vicinity of Taché and Bois Brulé on the C. P. R. the Huronian rocks are again found, as also on the east shore of lake 75, where they consist of hornblende schist, diorite and felsite schists of a hard compact nature, with partings of crushed granite or felsite followed by an outcrop of porphyritic granite of narrow width. North of this boss the rock is laminated (N. 20° W.), while another mass of granite is found on the north shore of the lake with a contact N. 70° W. but does not continue far, being followed by dark schists forming the lower portion of a hill of 100 feet or more, the top of which is composed of a coarser and more dioritic rock. West of this hill the country is extremely rough and broken, and granite crops out again at the distance of about one-half mile, with the schists much puckered at the contact. Farther west are a number of granite belts running north and south, i.e., cutting the schists almost at right angles, the latter rock appearing at the north-east angle of lake 76.

Features of the Fifth Meridian.

Continuing north on the line, the country is still very rough and the rock where exposed presents examples of dioritic schists and hard quartzose schists wheathering white, having a strike of N. W. and dip of 15° S. W. The line of contact with the eastern mass of granite shown on the map is characterized by the occurrence of quartz and mica schist with

garnets. West of the 63-mile post about 10 chains the granite is seen, while 1½ miles west the Huronian occurs and is very hard and compact around lake 81, where altered diorite occurs with a hard dark quartzose schist with garnets. The line finally emerges into the granite at about 64 miles 40 chains and was followed east to lake 78 and west for a mile where it is much contorted with diorite and pyritous schists. Northward the country is covered by drift, and only occasionally are exposures of granite seen reaching prominent elevations on the west shores of lake 87, and assuming a crushed appearance and passing into diorite with blebs of quartzite at about the 70th mile post. The contact shows pyritous bands interlaminated with clastic belts of both light and dark color striking N. W. At about 70 miles 60 chains the rock is decidedly schistose, N. 20° E. with a dip of 15° N. W., and appears to be a fine white quartzite with slightly marked partings of mica. Followed north this rock becomes more distinctly clastic, and finally passes into agglomerate mixed with fine diorite, some felsites and fine quartzose schists with larger blebs of the same mineral.

At about 48 chains in the 72nd mile a narrow belt of granite crosses the line and extends some distance eastward, while to the west it forms a contact on the shore of lake 88, showing pyritous diorite and microcline granite.

North of this belt the Huronian schists continue to lake Minnietakie and west to Big Sandy lake, presenting extremely rough hills and much agglomerate in the interior, while soft hydromica schists occur with quartz veins on the shores of both lakes. On lake 89 are bands of hornblende schist with pyrite and seams of quartz, while 10 chains to the east of 73 miles 40 chains the rock is very schistose, (N. 25° E. and dip 30° N. W.) consisting of crushed granite, altered diabase and quartzite with pyrite.

North of lake Minnietakie the rocks are essentially similar. At 79 miles 20 chains a belt 50 feet wide of sugar quartz bounded by crystalline quartz crosses the line. East of 80 miles 10 chains occur some soft chloritic schists with quartz.

Around Whiting's lake the rocks are well mineralized, fairly hard schists with numerous quartz seams on the west shore; strike N. 5° E., dip. 30° N. W. West from the outlet of the lake at the southwest end are some exposures of agglomerate, and beyond a clastic series followed by fine grained quartzose schists with slight interlaminations of pearly mica. This latter rock forms two prominent ridges, contains some quartz and is mineralized in places.

On Maskinonge lake, which is connected with lake Minnietakie by a three-mile portage and with Little Vermilion lake by a tortuous stream, are found hard compact rocks and slate like quartzose examples, and seams of hard barren quartz. North of this lake the country is well covered, a rock resembling arkose sandstone occurring on the south shore of Big Vermilion lake, while the northwest shore and the islands show green schists with pyrite and quartz seams, diorite belts and the usual assemblage of Huronian rocks, which continue to the Laurentian contact at 91 miles 60 chains. In the Laurentian area the usual gneisses are found here as elsewhere, some high hills affording a good view of Lost lake and the territory to the north. A canoe route much used for light travel connects Lost lake with Minnietakie by way of lake 48, Big Vermilion, Little Vermilion and Maskinonge lakes.

In connection with this meridian the canoe route from Dinorwic by Big Sandy Lake may be considered. A wagon road of about nine miles in length connects the town with the Hudson's Bay storehouse on the south side of Big Sandy lake. About half way across this portage is found the contact of the two formations. Professor Coleman, who made the trip to Lac Seul in 1895, thus describes the shores of Sandy lake: "For about two miles east of the landing at the long portage a rather coarse-grained reddish gray granite is the only rock found. Here a point which projects displays a small mass of gray schist seemingly included in the granite, and beyond this gray green Huronian schist with a strike of about 70°. In a deep bay on the east of the lake hard green banded schist with small bluish quartz veins occurs, having a strike of 30°; and on the northeast side of the bay

Dinorwic to Big Sandy lake.

similar schists with more or less contorted bedding show a strike of 20° or 25°. The point that projects to the south of the portage to lake Minnetakie consists of coarse-grained porphyritic syenite of a light flesh color. At the portage contorted green schists occur again, so that the syenite is apparently an isolated boss."

These observations coincide with the disposition of the Huronian as determined by myself on the line and to the westward. The above mentioned boss of syenite must be of small size, as it was not observed in any excursion to the west, although I traversed the region from the portage to the line. There is no doubt therefore that Professor Coleman's assumption of an isolated boss is correct.[1]

My opportunity of examining the shore of lake Minnetakie being but slight, I shall again refer to Professor Coleman's report, the substance of which is that the entire shores of the lake are composed of the greenish Huronian schists, clay slates, phyllites, porphyrites, etc., with yellowish sericite at some points. He also makes the statement that the lake was probably hollowed out of these softer schists as the green schists occur inland. This observation holds good for a large number of the lakes seen this summer, and at no place have I encountered sericite but on the shores of lakes.

General Features of the Region.

Huronian and Laurentian characteristics.

The whole region examined presents both in its drainage system and in the disposition of its rocks, a marked N.E. and S.W. folding. The longer axes of most of the lakes lie in this direction, while the streams sometimes follow a similar course, and at others burst over the barrier at the side and fall into the next trough through a short channel. This accounts for the numerous lakes and the shortness of the streams flowing northwest or southeast, the main streams flowing in the natural valleys northeast or southwest. While this bearing of the ridges is more pronounced in the Huronian than in the Laurentian areas, it is still evident in the latter as shown by the fact that the Huronian belts themselves have for the most part a similar direction. Of these Huronian areas there are three main groups which we may call (1) the Sturgeon River area, (2) the Minnetakie area, and

[1] As to the nature of the country along the Wabigoon and Minnetakie road, the following report has been made to the Commissioner of Crown Lands by Mr. John D. Aaron, of Wabigoon, under date of April 13, 1898:

"Leaving Wabigoon the road runs in a northeasterly direction, and passing around the base of a precipitous ridge ascends to a plateau through a gradually rising ravine. This plateau is lightly timbered with poplar, and is drained by Nugget creek. The soil is loamy, of varying richness, some sandy and other portions pure black. R. M. Fell of Wabigoon has 160 acres of the latter on the northern slope, and has cleared five to 10 acres which he intends to market garden in connection with his dairy farm, already supplying the town with milk. The soil on this farm is exceptionally rich.

"Leaving the plateau the road skirts the end of a ridge on which the Northern Queen mine is situated, about a quarter of a mile from the mine. The ore in this mine, though refractory, is rich, averaging $18 to the ton in gold down the shaft, with traces of silver and nickel. It is heavily charged with pyritic iron and manganese, so much so as to make it almost solid mineral, very little quartz being evident. A little to the east of the road, where it passes the Northern Queen hill, is location SV117, a very rich prospect, carrying visible gold, discovered by two Montana prospectors last summer. Location SV111 is also close to the road.

"Passing through a beautifully open park-like stretch of pine, with sandy soil, the road comes to Nugget creek and runs by this for some distance through a tract of land taken up by Mr. McGee for agricultural purposes. Mr. McGee, formerly of Manitoba, has put up a log house and stable, and has cleared considerable land this winter. The soil on this tract is a sandy loam, clay subsoil, and it is more heavily timbered than most of the surrounding country with red pine, spruce, poplar and tamarac. Along Nugget creek there are large tracts of hay lands, and many tons were put up last year by settlers. The road passes the verge of a large hay meadow, 80 to 100 acres in extent, and passing through a heavily timbered area it ascends a sandy ridge timbered with light jack pine. Springs are abundant in this vicinity, and there are several running streams of beautiful water, some rather heavily impregnated with iron. For four miles the road runs over good land for agricultural purposes, sandy and rich black loamy soil alternating.

"The timber is chiefly jack pine, varying with hazel, alder and birch interspersed. A beautiful

(3) the Wabigoon area. The rocks composing these areas are essentially similar, no single representative being found in one which is not met with in the others. In the petrographical part of the report will be found descriptions of the more important of these rocks. The Laurentian areas show granite near the contact in almost all cases, sometimes extending for miles with no trace of lamination, e.g. between Dominion lake and lake 35; at other points presenting a slight lamination in the mica only; while the true gneiss structure is apparent at numerous points, notably around Lost lake.

Surface Geology

The Canadian Pacific Railway at Ignace crosses a narrow strip of land between the small lake to the south and the one to the north. This strip seems to be essentially a moraine composed of unstratified clay and sand filled with boulders of granite and gneiss, with occasional blocks of diorite and Huronian schists. Gneiss boulders 10 feet by six feet with large inclusions can be seen on the portage between the two lakes. In this morainic deposit a large kettle hole was observed to the east of lake 2, with banks about 20 feet high on the outside and 40 feet within. This character of country obtains to the shore of lake 4, north of which however is an area of fine white clay probably of post-glacial age. This passes northward into a stretch of fairly well covered land with boulders and only occasional exposures to the shore of Victoria lake. This area, of which the characteristic soil is clay, stretches from the shore of Indian lake eastward for a considerable distance beyond the line.

Morainic deposit at Ignace, on the Fourth Meridian Line.

On the northern slope of the height of land between Victoria and Bear lakes is a belt of coarse white sand apparently derived from the decay of gneiss in situ.

North of Bear lake a somewhat scanty clay soil extends to about 10½ miles, where it passes into an area composed of sand. With many interruptions this continues, scantily developed around lake 11 and well shown on the shores

A region of sand and sandy-clay.

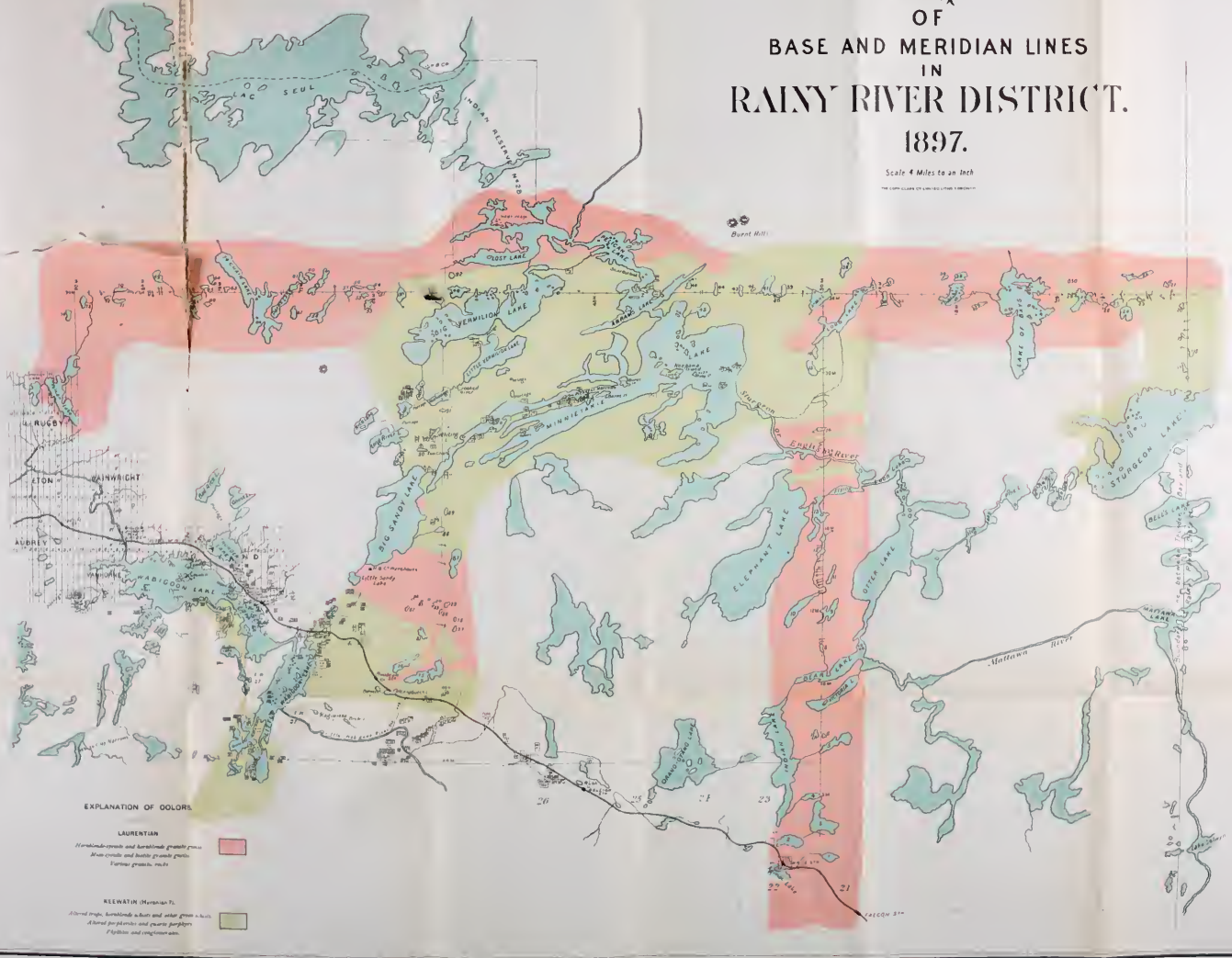
park-like area of scattered pine a mile wide is crossed, and shortly after passing to lower ground an entirely open meadow some 10 acres in extent is reached, rich in grass, quite level, and of seemingly dry or sandy soil. The country here becomes more broken and hardly as suitable on that account for agriculture, although the soil is very promising, and soon the burnt country is reached, a fire which passed through here some time ago having cut a swath 10 to 15 miles wide, leaving the rocky ridges almost bare, an ideal ground for the prospector. Owing to the thickly timbered nature of the ground in the previous eight miles, little rock was visible, only one outcropping, a mass of schist with bands of blue and white quartz. This outcrop was thickly impregnated with mica, pieces one and two inches wide being detached with a knife. Several veins of quartz were noted, carrying iron and copper pyrites; others of greenish hue and tinged with chlorite. About half a mile from the road, close to the western shore of Sandy lake, a vein 30 feet wide composed of alternate layers of quartz and micaceous schist has been located, with a smaller vein running parallel. This vein has been traced for nearly two miles, and crops up in various places over a length of six miles. Near Rocky rapids stringers of rose-colored decomposed sugar quartz were noted, and about a mile away a large dike of quartzite of a bluish black nature, heavily mineralized with iron pyrites and stained with hematite, affords a trace of gold and silver. Owing to the burnt-off nature of the country the ridges of rock are almost bare of vegetation, and run for miles at varying heights above the general level, offering a great field for prospectors, whilst thousands of cords of good well seasoned dry wood are lying on the ground and could be profitably gathered. The mineral belt can be said to extend from within 10 miles of Wabigoon to the shore of lake Minnetakie, though near the latter the rocks are gradually covered over as the vegetation gets more abundant.

"Several lakes run close to the road, of which no mention is made on any maps; Jackfish lake, about three miles long by one wide, Trout lake, two miles long with deep bays, and three other unnamed lakes, one rather large running parallel to Minnetakie and about a mile distant. Mr. T. B. Speight has surveyed claims near the latter lake during the winter, so that it will be properly located.

"With the exception of a fringe of white and red pine on Sandy river no marketable timber has been sighted, though an immense area of white pine must have stood close to Minnetakie and Sandy lakes many years ago. The rotting trunks of pine trees two to three and a half feet diameter, destroyed by fire, are scattered throughout the country, and one isolated pine of huge stature is still growing, being passed on the road."

Map
OF
BASE AND MERIDIAN LINES
IN
RAINY RIVER DISTRICT.
1897.

Scale 4 Miles to an Inch



of lake 12, to about the point where the line enters lake 13. The region traversed by the line in the vicinity of Flying Loon and Elephant lakes is a fairly heavy sandy clay, with a diminishing percentage of sand to the north, mostly level and with few exposures. It is through this accumulation that the waters of Elephant lake make their way, apparently without encountering the country rock. A little to the east of the line on the river to Flying Loon lake the drift accumulation forms banks of some height, containing more schistose and eruptive masses than were observed farther south. An erratic was found here resembling a pink sandstone, which on examination with the microscope disclosed the fact that it was composed of rounded quartz grains, cemented by a silicious matrix colored by ferunginous matter and presenting in places small calcite crystals. The only rock in any way resembling it subsequently found in situ occurs on the south shore of Big Vermilion lake, but as the drift in this district has undoubtedly travelled s.w. it can scarcely have had its origin in that locality.

North of Flying Loon lake the soil is again sandy, fairly level and studded with large swamps two or three miles in diameter. At about 21 miles 40 chains the country reaches a greater altitude and exposures are more frequent, while the drift is filled with enormous boulders of gneiss and granite which seem to have been derived from the rocks beneath them and not to have been borne far by glacial action. It is quite possible that a large area of the thin soil in this district has been formed by subaerial decay. Glacial striæ are to be seen on the summits of the hills of hard dioritic-schists to the east of 22 miles 60 chains, having a direction s. 20° w. This ridge falls into a large swamp and the country continues comparatively low to English river, immediately to the north of which, after a slight rise, low sandy soil and numerous swamps are characteristic, but a hard clay soil is met with at the 25th mile post. Beyond here the summits of the hills are composed of fine white sand, while stiff clay seems to occupy the hollows. The superficial mantle is of considerable thickness and rock outcrops are correspondingly scarce.

North of lake 14 the drift is very tumultuous, with scanty soil, enormous boulders of all kinds and numerous small ponds and swamps. East and north from the 28th post the country is flat and filled with large cedar and scrub spruce swamps, to about 28½ miles, where two parallel ridges of drift accumulations cross the line N.E. and S.W., affording a channel between them for the river at that point. This stream is of some size and probably constitutes the outlet of Long lake; it is navigable, but numerous portages are necessary. From this river to Long lake the country is gently rolling, with a sandy soil for the greater part. Exposures are few, except in the vicinity of 30 miles 40 chains.

The portages along the route from English river to Sturgeon lake were found to be for the most part over clay, the one between Otter and Hut lakes showing glacial striæ s. 12° w. All the lakes of the chain are extremely pretty and generally the shores have a green aspect, but the timber is of comparatively recent date. Two grand old pines overlook the portage above mentioned, and probably represent the sole survivors of a once luxuriant pine forest. Around Sturgeon lake and on the islands banks of sand occur 20 or 30 feet in height. A panning of this sand resulted in garnets and magnetite, but no gold or sulphides.

English river to Sturgeon lake.

On the Fourth Base Line.

Westward on the fourth base line from the Thunder Bay boundary line the soil is very thin and for the most part is coarse sand, while large boulders are not frequent until we reach lake 24, where the stream from lake 23 flows over a bed of boulders of Laurentian and Huronian rocks. The waters of this chain of lakes find their way into Lake of Bays, and are fed by numerous swamps lying to the northward. The soil continues scanty to Lake of Bays, beyond which however it is deeper and chiefly sand, while around lake 32 there is a greater development of clay than hitherto observed on this line.

From Boundary Line to Long lake.

The west shore of Dominion lake shows a curious feature, namely a bank of sand six feet high following the contour of the lake on this side. Beyond this ridge lies a swamp

to avoid which animals of all kinds have used the bank as a runway, making a distinct road around the lake. This formation is evidently due to the sand washed up by storms from the east being cemented and retained in position by the cedars, which form a fringe around the lake.

From the northwest corner of this lake a boulder ridge, perhaps a moraine, stretches s. 10° w. and crosses the line a little beyond the lake shore. A large swamp with spruce bush forms a belt about a mile wide and six or seven miles long, stretching N. E. and S. W. It contains a few ponds, which though small appear to be of considerable depth. At its southwest corner it seems to be drained by a stream which I followed for a mile without being able to reach its termination in a lake. Around Long lake the soil is sand and fairly thick northward towards lake 38, while around Thirty-Mile lake the rock is bare except towards the south, where it is overlaid by numerous boulders to the shore of Long lake on the fourth meridian.

Sand continues to predominate to Lake 39 and glacial striæ S. 40° W. are seen at 30 miles 40 chains. The waters of lakes 39, 40 and 41 flow out at the north end of the first lake and probably make their way into the Sturgeon river, as also do the waters of Thirty-Mile lake. The stream shown on the map as entering lake 41 just north of the line was followed up for some distance, but was finally lost in a swamp. Although of considerable size at its mouth, it rapidly narrows and shows very little current throughout. Lake 42 has particularly dirty water, but sandy shores for the most part. The creek to lake 41 at the time of observation, July 14, was entirely dried up, making the lake a stagnant pool, and considering its size the most unpleasant sheet of water seen during the summer. To the south of the 35th mile post is a slight elevation, and beyond a large swamp probably the same one that the above mentioned stream drains. This swamp is separated from lake 42 by a sharp ridge. Fine sand occurs over the whole of this region. Lake 43 passes out to the south by a broad but shallow stream into a muskeg. A means of reaching it may possibly be found by following this stream towards lake Minnietakie, in which direction it doubtless forms connection with other lakes. I consider this important, as in my opinion the country around this lake is worth prospecting. The high diorite hill west of lake 44 is a distinctive point in the topography of the district, and the country is exceedingly rough and very difficult to travel. From this hill to lake 41 the country is of a hilly nature, rendered almost impassable by large quantities of fallen timber. This area however passes into the green bush in the immediate vicinity of lake 45. East of lake 46 the country is high, and bare of both soil and timber, rising into a ridge with a few pines overlooking the valley of the Sturgeon river. Beyond this valley are high burnt hills of gneiss which seem to be as far away from this point as from the hill near lake 44. Sandy soil with poplar and spruce thickets continues westward to Abram's lake.

From the Fourth to the Fifth Meridian.

Westward from the intersection of the fifth meridian over the numerous dioritic and porphyritic rocks is spread for the most part a mantle of coarse sand, presenting in some places a level upland with small pitch pine and in others dropping into large muskegs. To the west of lake 50, as also in a minor degree to the N. and N. W., are high hills, some of diorite and others of felsitic and other rocks indicating the Laurentian contact. The waters of this lake pass out to the south and probably find their way to Vermilion lake. Lake 51 is also surrounded by fine sand, and a large area of high sandy territory stretches from lake 53 in a southeasterly direction towards Varmilion lake, terminating about a quarter of a mile from its shores. Lake 55 is in possession of two families of beaver, the house of the larger family being 20 feet in diameter. This lake discharges to the south, but not into lake 53, which also has an outlet in the same direction, while half a mile to the south of it a creek of considerable size flows southeast. Lakes 54, 56 and 57 were found useful as a canoe route in transporting our supplies, the portages between them being merely "lift outs."

From the Fifth to the Sixth Meridian.

Some high hills intervene between lakes 57 and 58, with still higher ones west of the latter lake rising to elevations of probably

150 feet above it. At the point crossed by the line and to the north the banks on both sides, particularly the west, are precipitous, making a most picturesque view, shown in one of the accompanying photogravures. This creek was followed down stream north and east, and it shows numerous rapids for the first mile of its course, after which it widens in the hollow and appears to again expand into a lake at some distance to the northeast. One mile south of lake 59 are some high hills with a valley beyond; four to six miles away appears a chain of hills tending in a southeast direction.

The whole region around lakes 59, 60, 61 and 62 is rough, but fairly well wooded in a sandy soil, with deep moss and numerous evidences of the presence of moose and caribou. Parks' lake is a pretty sheet of water stretching N. E. and S. W., constructed at two points and expanding into a bulb of half a mile in diameter at the southern end, whence it enters by a stream of a few chains into 74-Chain lake, so named from the circumstance that the larger western arm is exactly that width where crossed by the line. This lake is an extremely crooked body of water, consisting of five arms radiating from a common centre E., S. E., S., S. W. and N. W., the last being the largest and the southern arm next in size. Its shores are green all around, with principally a sandy soil broken by numerous exposures of rock. To the west of the lake the soil is clay, and this extends for a mile or more north of the line and also to the westward but passes into a ferruginous sand before reaching lake 62, which has low swampy shores. A large swamp seems to sweep to the S. W. a mile south of this lake and to empty into 74-Chain lake a short distance south of the line. An old Hudson's Bay Co. road crosses the line a short distance past the 78th mile post and continues north through a similar country past lakes 64 and 65.

In the vicinity of lakes 67 and 68 the soil is sand on the ridges but clay in the flats. The stream represented as entering this lake from lake 69 is incorrectly laid down, as that river, which is of some size, bends off to the southwest after crossing the line. Lake 69 has low marshy shores, except at two points on the east side. From this lake westward to the 84th mile post the soil is all sand spread over flats with small timber, and sinking in places into stretches of swamp. On lakes 70, 71 and 72 a scanty layer of sand occurs over an exceedingly rough country, rising into high bare hills near the intersection of the sixth meridian.

Fifth and Sixth Meridian Lines.

In the bed of the stream flowing into Pelican lake is found a clay bottom towards its outlet. This river on entering Pelican lake has formed a long neck of land on both sides of its course, thus converting both the northern corners into large marshes which were crowded with black duck at the time of our visit. The Pelican river breaks out of the southern end of Pelican lake by a fall of 15 feet, which is followed at intervals of 100 yards by two others. Below the lower fall the stream is shallow, and somewhat difficult to navigate owing to the presence of much driftwood. For two miles at least before entering the Wabigoon river large areas of light clay land are to be seen, all of which seem suitable for agriculture. The same observation holds good along the Wabigoon river. The soil on this and the Pelican river seems to be lighter and less liable to cake than that in the immediate vicinity of Dryden and the experimental farm.

On the Sixth Meridian.

Around Dinorwic, near the line of the fifth meridian, is a considerable area of stratified clay, a well of 20 feet being sunk through it by the hotel proprietor at that village without his succeeding in obtaining an adequate water supply. From the railway northward to lake 75 a fairly level and somewhat swampy tract of country is found, with soil of considerable depth, which however dies out on the east side of the lake where some rocky hills break through. This broken and extremely rough country continues to the limit of the Huronian area. The granitic rocks beyond are not broken into ridges of so abrupt a nature as those observed in the Huronian belt, but form gentle undulations, the soil being coarse, sand filling the valleys, and intermingled with many boulders of granite.

At and north of Dinorwic Station.

Between the 67th and 68th mile posts it will be observed that a number of small lakes occur; these are all located in depressions in the surface deposits, rock cropping out on their shores in a few places only. This region presents long ridges of boulders in coarse sand, the rocks being mostly granite and piled in a most tumultous manner to heights of 50 feet, and as the sand has been washed away they are now simply immense piles of stones. It may be that they represent deposits pushed before the ice sheet in one of its later and minor advances.

Ridges of granite boulders.

Clay soil is again met with to the west of the 69th post and a deposit of 12 feet or more at places occurs on the shore of lake 87. Several small streams flow north, the eastern of which is about half a chain in width and three or four feet deep in places; this stream turns to the east and crosses the line at 69 miles 30 chains. Owing to heavy rain on Sunday, August 8, the stream rose so rapidly as to flood the tents at four or five feet above the normal level. Between Big Sandy lake and the line the country is rough, with steep hills rising abruptly out of swamps. The same conditions continue to lake Minnietakie and beyond to the vicinity of Whiting's lake, north from which is an area of high level clay territory with acres of huckleberries.

Lake 91 is swampy, with no exposures and apparently extending into a long marsh to the west. To the east of Maskinonge lake, north of the portage, the rock is very rough and covered with fallen timber and raspberry bushes, making it exceedingly difficult to traverse. Maskinonge river is swampy and dirty, averaging 20 feet in width by six feet in depth. I believe it is navigable without portages throughout.

North of Minnietakie lake.

Between Maskinonge and Vermilion lakes the soil is fairly deep, with numerous streams flowing westward, sand predominating until in the immediate neighborhood of Vermilion lake where clay appears, as also on nearly all the islands. It is somewhat remarkable that even the smallest islands, mere dots on the map, in some cases not 10 feet in diameter, should retain their capping of clay, which occasionally is 10 or 12 feet thick. The north shore of Vermilion lake also shows clay, but a short distance inland this gives place to sand, which is only scantily developed to the end of the line.

Economic Geology

Throughout the granitic and gneissoid areas south of the English river on the fourth meridian the only deposit of any possible value is the accumulation of fine white clay lying to the north of lake 4, but as this contains a considerable percentage of carbonate of lime it would not prove suitable for pottery, or for other use than agricultural purposes. The diorite belt south of English river, as before mentioned, forms a steep bluff running north and south at a distance of half a mile from Flying Loon lake. On the face of this bluff, in the schistose diorite, are numerous small veins of quartz and quartzite, some of six to eight inches in width. The diorite belt south of lake 14 is well mineralized in places, and may be regarded as a fahlband in which are some quartzite bands with garnets. One-half mile west from 26 miles 50 chains a six-inch vein of quartz was found running N. and S. in the diorite belt. In the schistose area lying south of the belt, and presumably of Huronian (Keewatin) age, rocks are found very much resembling the gold bearing strata of Lake of the Woods. Numerous mineralized belts cross this area, and about 30 chains west of the 30th mile post a vein of quartz was found two feet in width parallel with the transverse jointing planes and not with the schistose divisions of the rock; this direction of strike is common to all the veinlets of this district.

Mineral showings along the Fourth meridian.

The region in the vicinity of Hut lake and the portage into Otter lake presents long belts of well mineralized fahlbands, and although no quartz veins were found crossing these belts the district might well be worthy of prospecting. On the shores of Sturgeon lake, in the felsitic and dioritic schist, numerous small seams of quartz were observed. On a conspicuous point in the northwest angle of the lake, about three miles from the boundary line, is an old Hud-

On English river and Sturgeon lake.

son's Bay Co. post, used only at the trading season. Behind this building, near the junction of an extremely altered diorite with the gray somewhat soft schist, is a deposit of quartz in which a shot has been fired. On the north shore near the old line a softer and more sericitic rock is found which is more likely to prove gold bearing than the harder representatives of the series.

On the Fourth Base Line.

On the old boundary line between Rainy River and Thunder Bay districts the schists are plentifully splashed with quartz, but none of any size were observed. Quartz and quartzite veins, or more correctly beds, are found about a mile north of the first half-mile mark, associated with fine hornblende schist. The belt crossing at about $1\frac{1}{2}$ miles contains considerable pyrite and pyritous altered diabase, which is in close relation to bands of crushed granite. At $1\frac{3}{4}$ miles the magnetic variation is only 2° E., while 6° is the normal for the vicinity. Veinlets of quartz are found striking N. 80° E. and dipping 10° N. W. at three miles 20 chains a little north of the line; these occur at the contact of diorite belts with the country schists. A small quartz vein occurs at three miles 75 chains; this also is near dioritic rock. Some quartzite with pyrite occur near the eruption of quartz diorite west of lake 28. As usual in the Laurentian area, nothing of any economic value was seen, with the exception of some small masses of magnetite associated with quartz found near the 11th mile post.

Various small showings of minerals.

Near the contact on the southwest shore of Long lake some beds of fine pink and white felsite occur with a strike of N. 40° E. and dip of 40° N. W. The rocks in the vicinity are very much contorted, and the region may prove worth prospecting. At the point of contact on Thirty-Mile lake altered quartz porphyry occurs and masses of sericite schists with pyrites; also belts of a hard schistose rock, almost pure fine grained quartz with white mica, the whole crushed and sheared, and joined with a large mass of sericite with veinlets of quartz showing a trace of gold on assaying, followed by diorite and alternate bands of soft and compact schist striking N. 70° E. On the west shore similar rocks occur, particularly the hard, highly quartoze variety with light mica, but less sericite is found. On the small creek leading westward from Thirty-Mile lake schistose and dioritic rocks were found, with many interlaminations of quartz. In the belt to the southwest, composed of porphyrites, diorites and hornblende schists, numerous stringers of quartz were observed, an assay of which resulted in a trace of gold. No more quartz was observed in quantity until the shore of lake 43 was reached, where large masses of well mineralized sericite are seen with stringers of quartz, showing a distinct trace of gold on assaying, as also on the west side where the quartz occurs in reticulated veins.

Showings of gold in the Long lake and Abram's lake regions.

Just north of the point where the line falls on Abram's lake, in the sericitic rocks and slates, numerous bands of quartz are met with which gave on assaying a trace of gold. All around the shore of Abram's lake the mark of the prospector's hammer is seen. At a point about a half mile south of the line a vein is found in green pyritous schists striking N. 65° W. and dipping 31° S.W. which has been opened by prospectors and assays a trace of gold. Passing northeast towards the head of the lake, both on the shore and on the islands, much altered diabase is found interbedded with highly mineralized schists and permeated with small quartz veins. It was in this locality that the celebrated Golden Pocket was located from which some extremely rich samples were taken. I did not happen on it in my examination, but was informed of it at Dinorwic and saw an exceedingly fine specimen in the possession of Messrs. Ball and Douglas, who have done considerable exploration on Minnietakie and Abram's lakes. A vein occurs on the eastern side, near the head of the lake, being a distinct contact deposit with sericite to the north and hard pyritous schists to the south. This region and the territory towards lake 46 should prove as rich as any I have seen on the trip. On the west side of this arm a good show is seen about 20 chains north of the line, while numerous stringers are seen on

the point below. Around the second long point past the line a prospect has been opened by Mr. Alex. Livingstone of a number of lenticular veins, perhaps 10 in all, the largest about 10 feet wide, strike N. 50° E. and dip 30° N.W., carrying galena and pyrites assaying 1½ oz. of silver and a trace of gold. The country rock is soft hydromica secondary schists.

Just around the point from Pelican lake is another prospect in sericitic schists, N. 10° E., on which a vein of about a foot in width has been stripped for some distance. The island crossed by the line and those south of it are of an agglomerate nature, laminated N. E. 5° W., with some pyritous green schists. Southward along the west shore below the line is a prospect of reddish quartz in a hard and almost purely quartzose rock with light mica. A short distance below is a bald point of volcanic looking agglomerate or pyro-agglomerate, near the contact of which with some soft schists to the north is a series of veins which yielded on assaying $30 of gold to the ton. South of this agglomerate are dioritic rocks and slates, and to the southward point of the lake from this place were noticed numerous small veins with an average strike of N. 65° W., the largest being about 10 inches in width. On the east side of this arm to Abram's falls much less quartz was observed, but a claim has been staked by Mr. A. Botsford near the rapids, a specimen of ferruginous quartz from which yielded no gold ; the rocks in the vicinity are hard felsite schists and diorites. On the point of the narrows into Pelican lake the rock is of an agglomerate nature, in which location R110 is taken up, containing a vein about two feet wide with non-continuous walls and exposed for about 20 feet ; an assay yielded me no gold. Three chains south of 45 miles 65 chains on the south shore of Pelican lake is a prospect in hard clastic schists, with the inscription, "Ambooles, Oct. 12th, 1896, 80 acres," on a post. There is a main vein 14 inches wide striking E. and W., with several accessory parallel veins ; the country rock is well mineralized, but I observed little mineral matter in the vein stuff, which shows a trace of gold. On the shore of the second bay of Pelican lake

Gold on Pelican lake.

to the south of the Sioux Lookout, which is itself fairly well mineralized throughout, are some small bedded veins of quartz of about eight inches in width, apparently horizontal in position, associated with fine grained dark green pyritous schists. Some veinlets also occur near the Laurentian contact, north of which on the north shore of Pelican lake and on the shores of Lost lake nothing of importance was found. Directly east across the lake from the Sioux Lookout I have since learned that some rich claims have been staked, but lack of time prohibited the examining of this stretch of shore line.

On the southern side of the Vermilion river, just beyond the first rapids, is a location marked BJ18, 80 acres, with a vein about four feet wide of quartz and quartzite mineralized. The strike is E. and W. and the dip 20° northward. The country rock appears to be partly fine quartzose schists and extremely fine grained schistose diorite. The mineralized quartz assayed about $2 per ton. There is also a claim adjoining this one on the east. On the north side of the north bay of Vermilion lake, within two miles of the falls, two promising veins were observed striking east and west, the largest about two feet wide and tapering to points.

On the Vermilion waters, and westward on the Line.

As observed under the head of General Geology, no specimens of quartz were obtained between Pelican lake and Big Vermilion, but as the country rock is essentially similar they may be met with there as elsewhere in the district. Close to the belt of diorite described as passing near the intersection with the fifth meridian some strings of quartz were found an assay of which resulted in nothing.

A large number of diorite exposures were found west of the intersection with a belt of 10 feet of sugar quartz yielding nothing on assaying, followed by numerous fahlbands containing small veins of quartz. At about 61½ miles and south of the line are bands of schist with much magnetite and sugary lean looking quartz. About a mile and a half beyond are small strings of quartz with a little hydromica schist. Nothing was found in the Laurentian area west of lake 50.

Fifth Meridian.

Ruby Mine near Dinorwic.

A visit was paid to the Ruby mine on Wabigoon lake, about three miles from Dinorwic. The country rock consists of fine schists, with examples of a hard compact nature, and also some of a softer, more micaceous aspect. With these is interlaminated in the form of lenticular segregations a large number of veinlets of quartz, constituting from 25 to 50 per cent. of the whole mass. Both quartz and rock are finely mineralized. The magnetic bearings are: Strike, N. 44° E., and dip 10° to 15° N. W., while the variation is 7½° E. Two shafts have been sunk on the property, one of which is closed, while the second, in which two men were working at the time of my visit, was down about 15 feet, being six feet by eight and cribbed for about six feet. Some claims have been located in the vicinity of Taché, none of which were seen.

Near the mass of porphyritic granite west of lake 75 is a vein of quartz four to 10 inches wide, also on the north shore of lake 81, with schistose quartzite and micaceous and hornblendic schists.

Indications in the Huronian tract.

The succeeding granitic area as usual is barren, but in the Huronian rocks beyond indications were found at the following points: On Big Sandy lake, quartz in sericite. At 10 chains east of 73½ miles, altered quartz porphyry and fine grained schists, with quartz veinlets. South of lake 87, mineralized hornblende schist with quartz. Ten chains west of 74 miles occurs a hard white quartzose schist well mineralized, with bands of quartz and quartzite striking N. E. and S. W., and crossing the line at 15 chains in the 75th mile. East of 74¼ miles is some sericite with quartz. On lake Minnietakie, near the line, the rocks are for the most part the hard schists and porphyrites with some sericite, which is more common farther to the east, where Mr. Williams has located a claim showing several veins of about a foot in width, striking S. 30° W.; the dip is difficult to ascertain. This long arm of Minnietakie lake is said to yield gold at various points, as likewise the larger bay to the south. Messrs. Harvey and Hart have established a permanent camp on the northern bay and are exploiting several claims at various points on the lake. They have some promising specimens carrying galena and pyrite, and kindly invited me to see the properties, but lack of time prevented my doing so, as well as the shores of Minnietakie in general. Stringers of quartz also occur north of the lake in hard schists and porphyrites at 20 chains in the 78th mile, and also at 14 chains in the 79th, where they are one to two feet wide, striking N. E. with the strata. At 24 chains in the 80th mile a large mass of quartz crosses the line N. 40° W.; it is very sugary at the south side, but is about 50 feet wide and more crystalline towards the north. An assay resulted in a distinct trace of gold.

Whiting's mining camp.

Mr Whiting has established a mining camp near the outlet of Whiting's lake, from which he has cut several wide trails in order to systematically prospect the region; also a clear trail due east to connect the above lake with Minnietakie, and to enable him to bring in the necessary supplies. Five hundred yards west of the camp is a schistose gray rock with stringers and blotches of quartz, becoming an agglomerate towards the west. The next ridge beyond shows also an agglomerate rock on its eastern flank, but is more schistose westwardly, with numerous strings of quartz.

To the northwest of the camp the following series is presented: Hard felsitic schists, succeeded by quartzose micaceous schists and three feet of crystalline ferruginous quartz, with trace of gold; also bands of quartzite with crystals of magnetite and pyrite. Beyond is a hill of fine white rock, almost pure quartz in extremely fine grains, when broken across the stratification resembling a fine white quartzite, but parallel to the parting planes showing pearly mica On the surface this rock weathers white owing to the decomposition of the mica, and proving this mineral to be distributed throughout the mass. This hill, as also a similar one southwest of it, are fairly well mineralized: and have bands of quartz running through them.

On the small creek from Whiting's lake is a vein three feet wide striking S. 70° W., with a dip of 40° N. W., which has been traced for about 300 yards. This also is mineralized, as well as the green schist forming the country rock. A little farther down the stream a

belt of schists cross its course which are very highly mineralized, seams of four inches being almost pure pyrites owing to the decomposition of the surrounding matrix.

On the west shore of the lake also, several approximately parallel veins are found, striking N. 50° E. and dipping 30 N.W. They average 10 feet in width and traverse well mineralized rock. Six assays in all were made from Mr. Whiting's prospects, but only a trace of gold was found in any of them; however, the region being so well mineralized it is certainly worth a careful exploration.

Maskinonge and Vermilion lakes.

Between Maskinonge and Vermilion lakes some small stringers were observed at various points, but this particular region does not look as promising as most of the Huronian areas. The small island crossed by the line in Vermilion lake shows fine micaceous schists with mineral and splashes of quartz; the same rock occurs on the mainland west of the line on the north shore, where it contains veins of quartz. Continuing along this shore were found belts of diorite with brownish quartz at the contact and hard white and green quartzose schists, while in the bays at the southwest extremity of the lake very highly mineralized pyritous shales were seen, with an east and west strike, dipping 50° north and yielding a trace of gold on assaying.

At the 91st mile post pyritous schistose diorite with quartz was observed, and 15 chains beyond a decomposed hornblende epidote schist with quartz, followed by bands of hornblende schist heralding the Laurentian contact.

Besides the assays hitherto mentioned the following were made: From Wabigoon lake, O'Brien and Kennedy's property, a trace. From near Sioux Lookout, Mr. Livingstone's property, 4 oz. silver and $2 gold. From Adams lake, Mr. Livingstone's property, 11 oz. silver and $1 gold.

Aluminium sulphate.

I had been informed by Mr. Williams, the Hudson's Bay factor at Lonely lake, that certain islands in the lake contained deposits of aluminium sulphate. A search was made for these deposits, but with no result. It is quite possible however that such a formation should exist, and it could easily be accounted for by the decomposition of the pyrite in one of the numerous pyritous bands to sulphuric acid and its subsequent conversion into the above mentioned sulphate.

General Conclusions.

Probabilities of the Region

Speaking generally, it may be said that the whole expanse of Huronian rocks in the region carry gold for the most part in small quantities, but occasionally becoming more valuable. It will also be understood that the samples assayed were necessarily small surface chips. It may also be concluded that the agglomerates are the least likely rocks, the mineralized green and gray schists the next in order, while the soft sericitic rocks are most favorable for the occurrence of the precious metal. Also it may be noted that the very highly mineralized bands, those in which the pyrite plays a prominent part, are not necessarily rich in proportion to the amount of pyrite, but rather the reverse. The rocks very much resemble Lawson's Keewatin series to the south of the railway on Lake of the Woods; and I am aware of no geological reason why this district should not prove equally rich, although there is no guarantee to that effect, for the same rock in different localities may be entirely different in its mineral contents.

Timber and Agriculture

Along the Fourth Meridian Line.

South of lake 4 on the fourth meridian the timber is mostly scrub, with tamarac in the swamps, but to the east and north of that lake a spruce belt extends to Victoria lake and stretches westward a distance of two miles to Indian lake and an unknown distance to the east. This belt contains 20 or 25 square miles of red spruce, with some birch and an occasional pine. The largest trees are 16 to 18 inches diameter, but the average of all is not more than 10. Within this area are some stretches of clay soil that may prove useful for agricultural purposes.

North of Bear lake to Thirty-Mile lake the timber is essentially similar, consisting of spruce on the level fairly dry land, scrub spruce, tamarac and cedar in the swamps

and pitch pine on the highlands, with white birch and poplar on the sandy areas near lakes.

The best spruce on this meridian is found in the vicinity of the rapids out of Elephant lake, some trees reaching a diameter of 20 inches. No recently burnt land was seen, but evidences of a pine forest of 50 or 60 years ago were numerous.

Fourth Base Line.

In the region surrounding lake 20 and for a short distance west both the boundary and the base lines traverse a recently burnt tract. The point of intersection lies within a large burnt area stretching to the northeast. Scrub spruce with some cedar in the swamps extends to the fourth mile post, and north of here is another burnt area. From this point to Lake of Bays pitch pine is common on the high lands, while somewhat larger spruce and poplar occupy the depressions. West of this lake for about a mile are spruce, poplar, birch and balsam, and near the first crossing of the river is a considerable stretch of tamarac swamp. Around Dominion lake occur belts of open forest with pitch pine and spruce, while a prominent sand ridge crosses at the 20th mile with fair sized pitch pine, followed by a spruce area a mile to the south. This sweeps to the southwest with a large scrub spruce swamp on its northern flank reaching across the line.

Areas of burnt and timbered lands.

In the vicinity of lakes 35, 36, 37 and 38 fair sized spruce occurs, passing into pitch pine on the higher land to the east of Long lake, on the opposite side of which heavy spruce (14 to 16 in.) extends to lake 38 and on the line to Thirty-Mile lake. South of the line however on the shore of this lake a burnt area occurs, the eastern limit of which sweeps in a curve to the S.E., bending southwest north of the bay of Long lake crossed by the meridian. This tract appears to be recently burnt, as many trees are still standing, notably east of the lake, while on the west side the line continues in the brulé which passes into green bush about a mile to the south. The line again enters the spruce timber near the 33rd mile post, north of which for a mile it continues, but beyond is another burnt tract of earlier date. The southern part of lake 39 is burnt, but green timber follows the shore to the north. The burnt land continues around lakes 41, 42, 43 and 44, making the walking extremely arduous.

Around Thirty-Mile lake, and west of it.

From the high hill west of lake 44 the country is seen to be burnt far to the N. N. E. and S. E., while it is green a few miles off to the west and southwest. From this point of view it appears that the fire has followed a direction of N. 10 W. in a belt about 15 miles in width. Forest fires were seen to be burning at the time of observation (July 15) at the following points:

Forest fires.

N. 85° W.	5 miles	S. 80° E.	15 miles
N. 50° W.	5 miles	S. 35° E.	10 miles
N. 25° W.	10 miles	S. 50° W.	8 miles

The western limit of this area comes out on Abram's lake about a mile north of the line, while poplar and birch follow the shore to Abram's falls and for some distance east on Minnietakie, passing into fair sized spruce timber around lake 45. A well wooded area stretches from Pelican lake westward to Vermilion lake and on the shores of Pelican lake for the most part. A few isolated white pines stand sentry over the passage into Lost lake, where a small grove has withstood the great enemy to the forests of our country.

Timber of Abram's, Minnietakie, Pelican and Vermilion lakes.

All is burnt around lakes 48 and 49, continuing to lake 51, where the line again enters a green forest of pitch pine and spruce of 10 to 12 inches diameter. After having spent about two weeks continuously in the brulé, it was a great relief to foot and eye to again feel the thick, soft moss and to see the shade of the dark green spruce forest. On an upland of coarse sand before entering the timber, nature is seen at work recovering the desolate area with green, for thousands of small pitch pines of three and four inches in height are appearing among the charred logs.

Fifth and Sixth Meridians.

Very little can be said of the timber west of the fifth meridian: it is the usual succession of spruce, pitch pine, tamarac, birch, poplar and balsam, which obtains to near the intersection of the sixth meridian, near which another

On the Sixth Meridian Line.

brulé occurs sweeping down the line and around the western shore of Pelican lake, following the Pelican and Wabigoon rivers and reaching to the railway. Throughout the whole 90 miles of the base line no considerable area of land suitable for agriculture was met with. But, as is well known, in the area around Dryden and north and west down the Wabigoon and up the Pelican river a good mantle of clay offers excellent inducements to agricultural settlers, many of whom are now located at various points along the rivers and on the roads being built through the townships of Eton and Wainwright. It may be observed in this connection that the Indians at Frenchman's Head on Lost lake have small gardens neatly fenced and cultivated, in which are growing potatoes, cabbages and onions.

Farm lands at Dinorwic.

As observed in the Surface Geology, the little village of Dinorwic is situated in a clay area extending for about five miles around it, which appears as well suited for agriculture as the Dryden district. A pioneer garden has been cultivated by Mr. Prewer, the Episcopal missionary, in which corn, potatoes and cabbage were doing well at the time of my visit in August. This little village promises well; two years ago only two white men inhabited it, but now 20 or 30 buildings with a commodious hotel form the nucleus of what must become a thriving town if the mining development continues in the Minnitakie region, as it forms the natural base of supplies, being situate on the long portage from the Mackenzie river to Big Sandy lake, over which go all the Hudson's Bay supplies to the far north, and which will also form the means of access for mining machinery and provisions to the auriferous districts.

Wagon road to Sandy lake.

A burnt belt extends along the wagon road and around the south and west sides of Big Sandy lake, but green timber of a rather stunted nature covers the country on the line for about four miles, followed by a district through which violent storms from the west have levelled the timber over many square miles, making travel even worse than in the burnt districts. This condition does not prevail however far to the west, as spruce and pitch pine forest of 16 to 18-inch trees is found about a mile west of the line at 66½ miles.

Along the Fifth Meridian Line.

On the line at 67 miles green bush again appears, passing into an old brulé with small spruce, tamarac and pitch pine at 67 miles 28 chains, which continues around lake 87 and as far on the line as the 69½ mile post. The timber here is spruce of fair size, continuing to Sandy lake, and with some interruptions to Minnietakie, north of which lake however the country is burnt, with an occasional oasis of green timber, as on the south side of Maskinonge lake, clear through to the end of the line at the Indian reserve. A clay area just north of Whiting's lake and another between Maskinonge and Big Vermilion might prove useful for farming purposes, but their extent is limited, being in no sense large enough to warrant the laying out of a township.

General distribution of spruce timber.

To sum up this part of the work, it may be said that with the exception of the areas indicated at Dryden, Dinorwic and Indian lake, and the patches above referred to, the country can never prove an agricultural region. No pine occurs except a few isolated trees, but plenty of spruce of fair size is universally distributed over the unburnt districts. This would prove excellent pulp-wood, or would serve for other purposes to which the timber is adapted; the great difficulty would be in driving the logs to the front, as all the waters of the region belong to the Hudson Bay slope

Petrology of the Country

Mineral species of the Huronian areas.

The rocks of the Huronian areas present throughout evidences of intense metamorphism, including crushing, shearing and chemical and mineralogical alteration. In some places the weathering has proceeded to such a depth that it is impossible to determine the original nature of the rock. In the following list will be found a short description of a number of rocks which, with minor variations, will embrace all the species met with.

Hornblende schist. Dark gray or green rock, light green when much altered, more or less schistose in structure; to the naked eye in many cases homogeneous, in others slightly

speckled with white. Some varieties show light patches of fine granular quartz. Composed of hornblende and quartz.

Felsite schist. Hard light or pinkish schistose rock, very fine grained with occasional dark spots. Felspar, quartz and a little biotite or hornblende.

Diorite schist. Dark green schistose rock, in some cases homogeneous, in others speckled; resembles the hornblende schist but weathers lighter and more easily. Hornblende and plagioclase.

Chlorite schist. Light green schistose rock, resembling hornblende schist, but softer and more earthy-looking on fresh breaking. An altered hornblende schist or diabase. Chlorite and quartz.

Sericite schist. Soft, light-colored and extremely schistose, cleaving easily. Shows in many places white blebs, frequently with stringers of quartz; on hillsides presents more or less vertical faces. Sericite (hydromica) and quartz.

Quartzite. Hard fine-grained compact rock, light or dark in color, composed essentially of quartz. In one case it contained melinite.

Mica schist. Dark gray rock, generally fine-grained; occurs with Laurentian gneiss and near contacts. Quartz and mica.

Diorite. Generally dark green and compact; where coarse, the white part weathers out first, turning to soft white powder, which will serve to distinguish it from hornblende schist. Hornblende and plagioclase.

Quartz diorite. Like above, but contains quartz. In the field somewhat resembles hornblende granite.

Diabase. Resembles diorite, but the felspar is in the form of needles; originally composed of augite and plagioclase. In all the examples but one the augite was entirely altered to hornblende.

Quartz porphyry. White angular patches in a darker ground-mass. Consists of crystals of quartz and felspar imbedded in a ground-mass of the same minerals; generally much altered, passing into schists.

Porphyrite. Dull stony rock, with decomposed felspar and hornblende, the former frequently porphyritic.

Altered diabase. A rock of hard, fine, gray, compact nature; was found on microscopic examination to show the lath-like structure of diabase, in which the felspar and augite are completely disintegrated.

Phyllites and clay slates. Dark gray slate-like rocks with pronounced cleavage. Argillaceous matter with quartz and other impurities.

Agglomerate. Rock containing rounded fragments of pre-formed material cemented by a fine-grained matrix. Inclusions sometimes a foot in diameter. The rocks are in this region probably of volcanic origin.

Granite. Pink and gray varieties were met with, depending on the color of the felspar. Orthoclase, quartz and mica.

Hornblende granite. Same as above, but with the mica replaced by hornblende.

Crushed granite. Through intense pressure the granite has lost its granular appearance; the felspar is much altered and the quartz broken, while the mica generally appears as undecided dark spots or streaks.

Gneiss. Same composition as granite, but showing more or less schistosity, varying from distinct bands to mere rough parallelism of the mica flakes. Gray, pink, red and other varieties occur of different degree of fineness. In many places it is impossible to distinguish between this rock and granite.

Michipicoton Mining Division.

By Arthur B. Willmott M A B Sc

Introduction

IN PURSUANCE of instructions from the Director of the Bureau of Mines I left Toronto on September 10, 1897, to make a geological examination of the Michipicoton Mining Division.

The district may be reached either by steamer from Sault Ste. Marie or by the Canadian Pacific Railway. I chose the latter route, and found myself in Missanabie 21 hours after leaving Toronto. The villagers I found were considerably excited over the recent gold discoveries. A number of exploring parties had already started from there, and others were arriving daily. Canoes and Indians were at a high premium, and for a time none could be got.

Toronto to Missanabie Station.

For some time a little prospecting had been going on in the Michipicoton district, but no valuable discoveries had been made. During the early summer an Indian known as Teddy or Thaddy showed specimens of quartz carrying free gold at Missanabie. For a consideration he pointed out to James Dickinson of North Bay the situation of the vein on Wawa lake. Samples were obtained and rich assays were the result. On the first report parties hurried into the district from Sault Ste Marie and were successful in locating other veins carrying free gold. Their glowing reports were the foundation for most sensational articles in Canadian and American journals, many referring to the district as another Klondike. Men began to arrive from all quarters of the continent, and even women came into the district as prospectors.

History of the excitement

A second report that placer gold had been found caused still more excitement. Several parties claimed that they had found traces of alluvial gold, but Mr. C. I. Amey of Ottawa was the first to show specimens. On my reaching Missanabie Mr. Amey showed me specimens of gold which he claimed to have panned from the bed of a creek south of Manitowick lake. The nuggets varied in size from a grain of wheat downwards, were waterworn and were exhibited in a small vial filled with magnetic iron sand. It was chiefly on Mr. Amey's statement, backed up by these specimens, that the reports of placer gold had already been so widely circulated not only in Canadian newspapers but throughout the United States. It is fair to Mr. Amey to state that he had not intended to give publicity to these reputed placer finds, and he seemed surprised when I told him that what he was telling me in confidence had already been published in the Toronto papers. I examined the specimens closely, Mr. Amey remarking that I need not be suspicious, for they were genuine, and so far as I could tell they were. Two weeks later I visited the locality. On my return to Missanabie, in the absence of Mr. Amey, I told his man that I believed the gold had been planted. He confessed at once, telling me the nuggets had been taken from quartz which probably came from the Dickinson claim on Wawa lake. The sensational accounts are thus all founded on the surface appearance of the Dickinson claim and a few others near by.

Reports of placer gold.

Many prospectors, utterly unfitted for their duties, were induced to go into the district by these glowing accounts. Unused to bush life, unable to canoe, often not knowing quartz when they found it, it is not surprising that many quickly left. Unfortunately they told their friends that there was no gold in the country, when they should say that they failed to find nuggets on the shores of the lakes which could be shovelled into bags without getting out of their canoes.

A rush of prospectors to the region.

The excitement however brought other

classes of men; some of them old prospectors, others with experience of bush life or with plenty of grit. Many of these made 'finds' and still more of them were convinced that the district was well worth prospecting.

The Mining Division

The Mining Division as declared by an Order in Council of September 9, 1897, embraces a tract of about 5,000 square miles, "limited upon its east side by the meridian of the east end of Dog lake, or say 84 degrees west from Greenwich, on the south side by the latitude of Cape Gargantua, say 47 degrees 36 minutes, on the north side by the latitude of 48 degrees 30 minutes, and between the westerly ends of these lines of latitude, where they touch lake Superior, by the shore of said lake."

Extent and boundaries of the Division.

As shown on the map, the greatest length of the Division, that of the northern boundary, is 103 miles; the greatest width is 64 miles. The northeastern corner is traversed by the Canadian Pacific Railway from near Carry siding to near Amyot station, a distance of about 60 miles.

Missanabie, a railway station 232 miles west of Sudbury, is the seat of a Hudson's Bay Post. Situated on Dog lake, with canoe routes leading southwest, northwest and northeast, it is a convenient point for a prospector to outfit.

Grasett, 36 miles west of Missanabie, is a telegraph station, and supplies can be forwarded there by those intending to reach the heart of the country by way of the Magpie river.

Accessibility of the country.

A third means of ingress, and so far the one generally adopted, is by steamer from Sault Ste. Marie to Little Gros Cap harbor on lake Superior, a distance of 125 miles. In this case supplies must be brought with one, as the old post of the Hudson's Bay Company at Michipicoton is now closed. The steamer which runs in connection with the fishing stations along the shore of lake Superior makes two or three trips weekly. These fishing stations to the west of Michipicoton are also convenient starting points.

Ways of Entrance

Canoe routes, the railway and the coast line of lake Superior make the country fairly accessible. The last extends for about 140 miles in a northwestern direction, and the smaller sinuosities probably double the number of miles of exposed rock. The railway is here fairly parallel with the coast at a distance of 45 to 70 miles. From both the coast and the railway streams and lakes afford canoe routes to the interior. Most of these are comparatively short. Three routes are however possible from the railway to the coast, all of which end at Michipicoton. Two of these routes start at Missanabie, 46 miles in a direct line from lake Superior. They proceed in common in a southwestward direction through Dog and Manitowick lakes. Thence one follows the Michipicoton river around one-third of a circle to its outlet, a probable distance of 60 miles. There are on this route six portages, all well travelled, but some of them very rough. The Big Stony portage is five-sixths of a mile long, and the Long portage one mile and three-quarters. The others are short. Below the Long portage the river winds about in a gravel plain for nearly 10 miles, with considerable current, making it necessary to 'pole' in many places when ascending. For this reason, and because of its shortness, the route which diverges from the lower end of Manitowick is usually taken. This ascends a small stream in a southwestern direction, passes through a number of small lakes, over the height of land and down Wawa lake to its southwest end. Thence an old Canadian Pacific construction road may be taken to Michipicoton, a distance of five miles. At the time of my visit two teams were transporting goods across the 'tote-road' to Wawa at exorbitant rates. This route from Missanabie is very direct—little over 50 miles—and can be made in two days by two men travelling in a light canoe. The portages are numerous but good, except the Big Stony one.

Canoe routes to the interior.

The third canoe route is down the Magpie river from a point five miles east of Grasett, on the line of the railway; or a slightly

roundabout route may be taken from a point one mile east of the station. A straight line to Michipicoton measures about 44 miles, but the windings of the stream increase this to about 60 miles. Except at the upper end, the river flows through gravel plains, and at scores of places will barely float a canoe in September. The descent is 534 feet, and as there are only six important falls the river is a constant succession of currents which cannot be paddled up. Thirteen portages were made descending the stream, but the number would be much greater in ascending it. Two days' good paddling with a light load will bring one down, but four are required to return.

At the time of the construction of the Canadian Pacific Railway roads were built by the contractors for the purpose of getting in supplies. Though these roads are now overgrown with small brush, and the bridges across the creeks have decayed, they afford to the prospector a comparatively easy entrance to the interior.

Starting at Michipicoton, the main road ran five miles northeast to Wawa lake, where a steamer was used for six miles more. From the east end of this lake one road ran north to near Grasett station, a distance of 38 miles in a straight line. The main road continued northeast for 14 miles to Manitowick lake, where another steamer was in service. This vessel plied to the northeast end of the lake, where a tote-road two miles in length was built to Dog lake. A third steamer was in service here. From the northeast of Manitowick another 'tote-road' extends east to Dalton station, about 20 miles. While these roads are at present only of value to the prospector, in the event of active mining operations they may be of great service in getting in machinery, as at a comparatively small cost good winter roads can be made of them.

In travelling through the country I found Dr. Bell's map of the Basin of Moose River and adjacent country (published by the Geological Survey in 1883) to be of great value. The accompanying map is founded on this one, with such additions and corrections as I have been able to make. There are some changes in geological coloring, for I have classed all large bodies of gneiss and granitoid gneiss as Laurentian, even where they appear to be later than the green schists they accompany.

Map of the Division.

The map was drawn for photo-lithography by Mr. D. G. Boyd, Inspector of the Division. Dr. Bell's map enlarged 16-fold forms the basis. To this has been added the surveys along the line of the Canadian Pacific Railway, Salter's base line run east from Michipicoton, Herrick's line, and surveys of mining claims, the originals of all of which are in the Crown Lands Department. The coast of lake Superior is enlarged from Bayfield's chart.

The present variation of the compass at Michipicoton is 2° 16′ west, and this correction has usually been made in giving strikes.

Literature.

Papers and Reports on the geology of the Division.

The following list of papers and reports dealing more or less with the geology of the Michipicoton Mining Division is given here for convenience of reference :

Rep. Geol. Sur. Can. 1846-7. Logan's description of the conglomerate at the mouth of the Doré, p. 10. Rocks of the coast, 25. Sandstone at Capes Choyye and Gargantua, 31. Murray on the Michipicoton river.

Lake Superior, its Physical Character, Vegetation and Animals. Louis Agassiz, 1850.

Geol. of Can. 1863. Section of Huronian slates at the Doré, 52. Sandstone at Gargantua, 82. Native copper at Gargantua, 703. Copper pyrites at Michipicoton bay, 703.

Rep. Geol. Sur. 1866. Macfarlane, Lake Superior rocks. Hematite at Little Gros Cap, 130.

Rep. Geol. Sur. 1870-1. Bell, Pic and White rivers.

Rep. Geol. Sur. 1875-6. Bell, Michipicoton river, 331, 335.

Rep. Geol. Sur. 1876-7. Bell, Lake Superior, Gros Cap to Gargantua, 218.

Rep. Geol. Sur. 1880-1-2. Bell, Rocks of the Michipicoton river and Dog, Oba and Magpie lakes. Geological map.

Am. Geol. XX. 126. Taylor, Dog lake not an outlet of Superior.

Minn. Geol. and Nat. Hist. Sur. XX. 1891. Lawson, Beaches at Dog River.

Bull. Denison Univ. II pp. 119-143; with four plates. Herrick, Tight and Jones, Geology and Lithology of Michipicoton Bay.

Traversing the Region

Missanabie is situated on the north shore of Dog lake, 675 miles west of Montreal. The village consists of a dozen buildings situated on both sides of the railway track, which forms the only street. The name, which has been variously spelled by different explorers, is now written as above on the authority of the railway company. Mr. Ross of the Hudson's Bay Company informed me that the name meant Pictures in the Water, the reference being to some old Indian pictures on a cliff which are reflected from the water.[1]

Missanabie Station.

Missanabie is the starting point for Brunswick House and Moose Factory. The canoe route is over the height of land into Crooked lake, the headwaters of the Missanabie branch of the Moose river. The distance in a straight line is 235 miles, but the sinuosities of the route increase this to about 275. Fifteen to 20 days are taken for the trip up from the Factory. Supplies for Brunswick House are now sent in this way instead of by Moose.

Missanabie to Michipicoton.

The morning of September 11 was spent in ordering supplies and engaging canoemen. Through the kindness of Mr. S. P. Ross, the Hudson's Bay factor, I was able to procure two first-class bark canoes and two very experienced Indian guides, George Sanders and Louis Quackageesick. Both proved very efficient canoemen and packers, and George attended to the cooking in a very fair manner. In the afternoon I went with Mr. C. I. Amey, a prospector from Ottawa, to examine a location taken up for anthracite coal. Through the kindness of Mr. Kennedy, superintendent of the C. P. R. for this division, we were carried 3½ miles west on a freight train right to the location. The substance which Mr. Amey had supposed to be coal I found to be a narrow seam of pitchstone, and utterly useless I learned on my return to Toronto that Dr. Coleman had visited this claim earlier in the summer and has reported on it.[2]

Preliminaries of the excursion to Michipicoton Post.

On Sunday morning I was joined by Mr. Wilson Blue of the staff of the Toronto Globe. Mr. Blue proved a genial travelling companion, a good canoeman and packer, and saved me the expense of a third canoeman. Ten days later at Michipicoton I was joined by Mr. John Miller of Toronto. Mr. Miller had his own outfit and servant, and was bent on pleasure. A number of views taken by him have been photogravured for this Report.

The following morning I accompanied Mr. W. A. Lunan of Thornbury to a claim west of Missanabie, which was not yet patented. A vein of quartz six inches wide was stripped for a few yards, and an irregular mass was exposed on the side of a low knoll. A sample taken for assay yielded only a trace of gold. The wall rock consisted of hornblende schist striking 70°.

While at Missanabie I was shown a specimen of magnetite from 30 miles south of Chapleau The bed is said to be four or five feet wide and to assay 68 per cent. iron. Mr. Thomas Lonahan of Missanabie is one of the owners. I was also shown graphite from Otter grade on the C. P. R.

Dog lake is an irregular body of water eight miles in length from the most northerly to the most southerly point and 12 from east to west. The northern arm, formerly known as Mattagaming lake (Branch in the Lake) is now called Loch Alsh, from the C. P. R. siding of that name. This arm receives the waters of Wabatongusheen lake, the headwaters of the Michipicoton river. From Missanabie an irregular arm extends east to the height of land, six miles in a straight line. According to Dr. Bell[3] the height of land portage is low and level, and only 356 paces long. Crooked lake, the headwater of the Missanabie branch of the Moose river, is said by him to be about 12 feet higher than Dog lake. Taylor[4] states that "the trough in which Dog lake lies is one of those curious deep rock-walled valleys that cross the wide, low crest of the Laurentide ridge at many places. Into this valley near the head of Dog lake a small stream comes in from the eastern side, and the present division of the

Dog lake and its tributary waters.

[1] See also Bell, Rep. Geol. Sur., 1877-8, p. 3C.

[2] Ante, p. 136.

[3] Geol. Sur. Can. 1875-6, p. 331.

[4] Am. Geol. XX, p. 126.

waters is determined by the low, broad delta which has been built up since glacial times." The height of this col is given by Tayler as 515 feet above lake Superior, but this is probably a little too high. Dog lake, according to the profile of the Canadian Pacific Railway as furnished me by Mr. White of the Geological Survey, is only 489 feet above Superior. Two aneroid determinations which I made are not quite satisfactory. Travelling by the Michipicoton the total fall at rapids is 362 feet. To this must be added the fall in 28 miles of river which I estimate to be 112 feet. Dog lake is thus 474 feet above Superior. The other determination made by way of Wawa, and in which considerable reliance may be placed, makes Dog lake 532 feet above Superior. For both determinations Manitowick is taken to be 119 feet below Dog lake.

Altitudes.

It has been considered possible that lake Superior when at a greater height may have flowed northward into Hudson bay through this Dog lake pass. Taylor has given his verdict against it, and I saw no evidence in favor of it. I did not have time to go up the eastern arm of the lake to the height of land. Some prospectors informed me that they had discovered quartz of some promise on Crooked lake, near the contact of the Huronian and Laurentian, as shown on Bell's map.

Dog lake Pass.

Missanabie is situated on Laurentian gneiss, but a short distance to the west the green schists are found. Travelling south along the east shore of Dog lake I noticed agglomerates at a distance of $3\frac{1}{2}$ miles. The strike of this rock was 45° A few yards farther south red granite was seen. Two and a half miles to the southwest fragments of hornblende schist are included in the granite. The granite passes insensibly into undoubted gneiss farther to the south and continues nearly to the foot of the lake. I coasted the west shore of the lake on my return and found it to consist of Huronian schists. At the lower end, where the two shores approach, the schists are cut by granite dikes, but with wider separation of the shores to the north this is not the case. The western end of Waboose or Big Rabbit island consists of Huronian schist The eastern end is an intrusive mass of gneiss. The line of contact of the two formations thus runs in a southwest direction for the most part down the centre of the lake.

Rock formations of Dog lake shores.

There are many beaches of gravel and boulders along the shore, made by the reassortment of glacial debris. At our noon camp eight miles south of Missanabie I found the elevation of a prominent hill to be 60 feet above Dog lake. This seemed to fairly represent the altitude of the country for miles around. Low rounded hills with intervening gravel and sand plains scantily covered with birch and poplar is the typical scene. Blueberries were still in their prime at this late date.

On Michipicoton River.

The Michipicoton river on leaving Dog lake plunges over a rocky barrier of Huronian schists. Two aneroid determinations, made two weeks' apart, agree in making the fall 14 feet. The rock is mainly chlorite schist, though some agglomerate is seen. The strike at the portage is 10°. The Little Stony portage on the northwest side is about four chains in length and very good.

Michipicoton river.

In a bay to the east of the outlet the old tote-road to Manitowick lake came out. A decaying wharf and steamer are the only indications of the once busy thoroughfare.

Below the portage there is a large mass of irregular lenses of quartz visible in the river bottom. This was said by the natives to have been taken up as a location years ago, but no record of it exists in the Crown Lands office.

The stream is boulder-dammed about three-fourths of a mile below, and here the Big Stony portage begins. The portage is on the east side and is about five-sixths of a mile long, taking 25 minutes to cross with a pack. The upper part is over a moraine consisting of stones two to four feet in diameter, which make a very rough path. The lower end crosses a deposit of finer material. In this the stream has excavated a channel in some places 40 feet deep. This part, about one-third of the whole, may be run by light canoes. Several

Big Stony portage.

prospectors panned these gravels, but found nothing. The average of two aneroid readings shows the fall to be 104½ feet, and Manitowick lake to be 119 feet below Dog lake. A considerable part of the fall is in chutes over ledges of schist.

Manitowick[5] lake lies in a narrow valley running to the northeast, and is enclosed by high hills. The main body of the lake is 10 miles long and about one mile wide, but at the upper end for two miles it does not average more than a quarter of a mile. The outlet at the lower end is not down the valley but across the ridge into a parallel valley, which is obstructed by glacial debris a mile below. In this way a subsidiary lake has been formed 2½ miles long and a half mile broad, connected with and forming part of Manitowick.

Manitowick lake.

Steep rocky shores characterize the lake, except at the ends. At the upper part, where it widens, there is a large sand beach through which a creek 10 feet wide finds its way. The influence of sand bars is here shown very nicely on a small scale. The creek, after reaching a point 15 feet from the lake, is forced to flow 100 yards to get through.

From this point the old construction road ran eastward to Dalton. I spent one morning exploring the region, travelling in as far as time would permit. For two-thirds of a mile, or as far as the first lake, the trail is good. This lake is a little over a mile long, narrow and shallow. The road is much overgrown with willows and travellin is slow. From the first to the second lake is about five or six chains. This lake is a little over a quarter of a mile long and quite close to the third, which is half a mile long. It would not be difficult to portage in this way. The road around the west shore of the second lake is very rough and rocky, and around the third lake it is not much better.

On the Dalton road.

Huronian rocks are found thus far. At the third lake the strike is 18°; opposite the first lake it is 128°; a little farther in, 118°. The contact with the gneiss was not reached, but it is probably not much farther inland. Hills 150 to 250 feet above Manitowick are all around. Most of these have been burned bare and are easily prospected. Diabase was most frequently met; bands of felsite and agglomerate occur. Considerable float quartz was seen, and also some small lenticular seams. Some pannings in the bed of the creek gave no results.

Subsequently to my visit a claim was staked on the east side of Manitowick, about two miles southwest of the tote-road, by N. J. Dingman of Palmerston. Mr. Dingman, whom I met at Michipicoten Post, was very enthusiastic over his claim. He described it as a vein of quartz exposed along the face of a cliff several hundred feet high. The vein runs to the northeast, following the formation, and dips slightly to the southeast (?) into the cliff. Fine gold was found in places. Pyrite, pyrrhotite and galena are found in the quartz. Four assays gave $0.50, $9, $13 and $26 respectively. The first was partly country rock and the last contained free gold.

Dingman's claim on Manitowick lake.

The northwest side of Manitowick has been burnt, but the southeast is still green. Spruce, balsam, birch and poplar are the prevailing trees. Tamarac, cedar, balm of gilead and black ash are also found. The mountain ash with its brilliant red berries occurs very frequently in single individuals. High cranberry bushes are found in the moist places.

Forest trees and rock formations.

About two miles southwest of the tote-road (on a point marked 81 on Bell's map) there is a small area of quartzose gneiss. South of this to the outlet, the east shore of the main lake and both shores of the smaller bay consist of a red biotite granite, with only a slight trace of stratification. At Pigeon portage, 1½ miles south of the outlet, the rock is a gray gneiss very indistinctly stratified. At both localities the rocks are cut by numerous dikes of diabase. Dr. Bell has mapped the rock on Manitowick as Huronian, and that at Pigeon portage as eruptive granite. Except in color there is no difference, both rocks being granitoid gneisses. Moreover the gneiss of Pigeon portage is continuous with and exactly resembles the gneiss south of Whitefish lake, which was mapped as Laurentian. For these reasons, and because the southwest shore of Manitowick is also gneiss,

[5] Indian for a blue serge cloth sold by the Hudson's Bay Co.

I have mapped the country south of the centre of Manitowick as Laurentian.

Pigeon portage, and the hills around it.

At the west end of the bay at the south of Manitowick is a sand plain through which the stream meanders for fully two miles before reaching Pigeon rapids. The portage on the east side is very stony, and takes seven minutes to cross with a pack. An aneroid reading showed the fall to be 18 feet.

Steep hills lie on either side of the portage One on the east I found to be 341 feet high. In the early morning, while the sun was but touching the tops of the surrounding hills, it afforded a beautiful though not extensive view. In the valleys at the foot all was yet enveloped in mist. To the north one could see the southern arm of Manitowick and the channel into the main body. On the east of the hill was another lake, about a quarter of a mile long and bearing a little west of north. Across this lake and nestling on the hillside was still another lake, recognized only by the column of vapor rising among the green trees. Southward the course of the river could be traced only by the mist. The hill itself is but scantily clothed with trees. Granitoid gneiss is everywhere, though sometimes hidden beneath a mossy covering. At one point a dike of diabase 10 to 15 feet wide cuts across the gneiss in a direction 10° west of north. Across the stream was a similar hill, well covered with forest, the upper part of which one could see resplendent in the golden hues of autumn. It was disagreeable to leave the warm sunshine and scramble through the wet shrubbery down into the cold foggy valley.

Whitefish lake.

At the foot of Pigeon portage is Whitefish lake, here a river-like channel about five chains wide, bearing 170°. Shortly it widens to 10 or 12 chains and then bears 200°. A creek comes in at the northeast angle. A mile and a half south a dike of diabase five feet wide cuts through the granitoid gneiss in a course bearing 160°. Further south another dike bears 110°. Whitefish lake is in a narrow valley between hills 200 to 350 feet high. On both sides the rock is an indistinctly stratified granitoid gneiss.

Frenchmen's Rapid.

At the outlet of the lake the river flows over a boulder dam which causes a rapid with a fall of three feet. This rapid may be run by light canoes. It is called Frenchmen's rapid from two French servants of the H. B. Co. having been drowned there. A portage on the east side may be crossed in three minutes with a pack.

An extensive Sand Plain.

At the foot of the rapid is a good section of a sand plain. The top of the bank I found to be 85 feet above the river, and the average of the plain is several feet more. The high hills which had enclosed Whitefish lake now turned off to the east and west, and in front of them to the south stretched a sand plain. Through this the river had cut its way. At the rapid there is a poorly defined terrace about 26 feet above stream, which probably marks a stage in the development of the channel. On the east side the plain is not well marked, but it could be recognized from the west bank by the level line of trees. A low ridge, a few feet above the level of the plain, extends from the hills on the west as far as the rapid. The position suggests that it may have been a bar across the mouth of a bay when lake Superior stood at this height; but of this I am not certain. I had only a few minutes at lunch time to examine it, and did not go inland. The top of the bar is 90 feet above Whitefish lake, and so is 441 feet above Superior, Dog lake being 489 feet.

Cat Portage.

Three and a half miles below this rapid Cat portage is reached The river in the interval is frequently very shallow, running over gravel and small boulders. At the head of the portage is a small boulder dam, but the real obstruction is a band of gneiss which here crosses the river. The fall I made to be 33 feet by aneroid. The portage on the east side is level but stony. It took eight minutes to cross with a pack.

Shequamka River.

Below the rapid, as well as above it, the stream winds about in a gravel plain on which there is plenty of spruce and tamarac. Currents from here to the mouth were very frequent. Seven-eighths of a mile below the portage the Shequamka comes in from the northeast. The stream is about half the size of the Michipicoton at

this point. Shequamka is the Indian for Branch in the River. At the mouth the stream runs rapidly over well-rounded boulders, but is so shallow that a bark canoe will barely float.

Leaving my outfit I pushed up the stream for 2½ miles. Above the mouth the stream becomes deeper, but the current is too strong to paddle against and we were forced to pole. In September half of the bed is out of water. The boulders which compose it are of all sizes, and mostly granitic. The banks are five to 10 feet high and composed of sand and gravel; no clay was seen. Tamarac, birch and spruce are the principal trees. My guide informed me that lake Shequamka at the head of the stream could be reached by canoe from Missanabie by way of Dalton.

Two miles up the Shequamka a band of Huronian, less than a quarter of a mile wide, crosses the stream. The rocks, which are hornblende schists, strike 110° and dip 80° to the north. Gray gneiss striking 120° lies against these schists on the north.

Tributaries and formations below the Shequamka.

Two miles below the mouth of Shequamka river the Michipicoton flows past a gravel bank about 30 feet high. A mile farther a small stream comes in from the east, and a little beyond another creek. On the east side the gravel bank is here 50 feet high. Three miles and three-quarters below the Shequamka a third stream comes in from the east. In size it is about one-third of the Shequamka. Lou's told me that it came from a lake about as large as Whitefish, probably a little longer. The lake is known to the Indians as Aninchigaming. It is reached by a series of small lakes, the portage into the first of which is a little above the mouth of the stream. It would require one day to get in and out.

A quarter of a mile below, granitoid gneiss occurs on the west bank. It contains considerable plagioclase and very little biotite. Below this stratified gravel and clay silt were seen in the bank. Two miles below is a hill of hornblende granite 299 feet high. The hill is covered with moss. Birch two feet in diameter is common. Mountain maple is abundant, and a little hard maple. On the east a mile below is gray gneiss.

Thunder Hill

Thunder hill, a striking cliff rising almost vertically from the river bed, is eight miles below the Shequamka. An aneroid reading made it 391 feet high. It is covered with trees, and no good outlook can be obtained except of a limited portion of the river. The hill is composed of Laurentian gneiss. Two miles below is a rapid which may be run with light canoes. The portage, which seems to be little used, is badly cut out and very rough. It is on the west side and takes six minutes to cross with a pack.

Just below the portage syenite gneiss occurs on the east. One mile and a quarter below, the Fine Sand river enters from the north, and three-quarters of a mile farther the High Falls of the Michipicoton are reached.

From the foot of the High Falls the river runs 12° north of west to lake Superior, which can be seen from the south bank a little inland from the fall. In a straight line the distance is eight miles, but the meandering of the river increases this considerably.

Camping at the portage I made two excursions, one of a day up the Fine Sand river, the other of two hours due south from the summit of the fall. The latter trip proved to be a very hilly one. Aneroid readings are however useless, as rain came on. One mile and a half to the south (an estimate) the gray gneiss of the river bank was replaced by Huronian conglomerate striking 115°.

Fine Sand river.

The next morning I put one man at moving the camp to the lower end of the portage, while with the other I explored the Fine Sand river. We went north from a point about one-eighth of a mile above the mouth of the stream, crossing a hill of gneiss 383 feet high. It took an hour and 20 minutes to reach the first band of Huronian schist where it outcropped on the shore of a small expansion of the river. The distance inland I estimate to be little over a mile. The strike of the hornblende schist was 52°. The Huronian band proved to be quite narrow. Following the stream northward, gray gneiss was reached in 15 minutes. Just beyond the stream divided. We followed the western branch, which is the main stream. In 15 minutes the gneiss was succeeded by a hornblende schist

striking about 80°. Huronian schists continue from here as far as I went to the northward, probably three miles and a half from the Michipicoton. About three miles inland the Fine Sand leaves a narrow lake. The lower end is about one-quarter of a mile long, two to four chains wide and bears 28° W. of N. The upper end, nearly a mile long and six to eight chains wide, bears 40° E. of N. The Huronian along the east shore strikes 40° to 60°. Returning I kept more to the east. Three-quarters of a mile south of the upper end of the lake a breccia of granite and greenstone was reached. The granite is clearly the later. A quarter of a mile farther the creek from the west was crossed. In another three-quarters of a mile undoubted gneiss was reached, which continued to the Michipicoton except for a narrow band of diabase one mile inland. We came out half a mile above the mouth of the Fine Sand.

High Falls of the Michipicoton.

The High Falls of the Michipicoton are a series of small falls in such quick succession that the whole descent of 80 or 90 feet is nearly vertical. In September the stream is small and half of the bed is exposed, but even then the sight is beautiful. A ledge of gneiss crosses the river and creates a barrier which is only very slowly being eroded away. Numerous pot holes were seen in the deserted part of the bed, but none of them were large.

A moraine has at one time dammed the river here to a greater height. On the north, where the portage crosses it, the summit of the ridge is 97 feet above the present river. On the south side it is not so high. This accounts for the stratified silts found in the banks of the river above the falls. They are simply sediments which were deposited in a narrow lake, since partially drained by the cutting down of the barrier at the outlet.

Long Portage at the Falls.

The portage on the north side is $1\frac{3}{4}$ miles long and takes 42 minutes to cross with a pack going down. The track is smooth and well-cut. The sand plain which it crosses shows several terraces. The first, 85 feet, is above the river at the foot of the portage, the second 113 feet, and the third 193 feet. The summit of the plain is 281 feet above. The total fall of the stream 184 feet. Below the Long portage the river winds about in a gravel plain for 10 miles with a swift current. What the fall from the foot of the portage to lake Superior is I failed to determine, as I traversed this distance after a rain, when my aneriod proved useless. The fall in the stream is probably about three feet per mile, which for 10 miles amounts to 30 feet. The beaches would thus be respectively 115, 143, 223, and 311 feet above Superior.

A claim was staked out on the portage. Messrs. Kimball and Connors showed me quartz from which they panned gold. It came from a mile south of the Michipicoton, a mile above the High Falls.

At the foot of the portage the rock is an altered quartz porphyry striking 90°. The river here is so broad and shallow that I walked for some distance to lighten the canoe. Two miles below the strike of the schists is 130°. Glacial striæ here run east and west, following the direction of the valley.

Geological features below the Falls.

Below the portage there is less gravel than above, and it is finer. Considerable sand is seen, generally horizontal, occasionally cross-bedded. Between three and four miles below is a vertical bank 130 feet high. The sand is occasionally parted by layers of clayey silt half an inch thick. The top of the bank is a level plain covered with tamarac and blue-berries.

About two miles up from the Post is a deserted channel of the Michipicoton. Sixteen or 17 years ago the river made a detour of over two miles to make an advance of as many chains. The Hudson's Bay factor cut a small ditch along an old portage trail across the neck of land (being less than 100 feet) and at the next season of flood the river took advantage of the cut and rapidly made a new channel. Coming down the stream and travelling north, at the present time an exact cross is met at this point. The arm to the east, the old channel, is blocked by a sand bar, but the unwary will keep straight ahead instead of turning off sharply to the west. Pursuing one's journey to the north a paddle of two miles or more will bring one back to the starting point.

Diversion of the river channel.

One mile from its mouth the Michipicoton receives the waters of the Magpie and then turns west into lake Superior, passing the Hudson's Bay Post on the way. About 200 yards above the junction of the Magpie, Wawa creek reaches the Michipicoton from the northeast, leaping down to its level by a pretty fall of 10 or 12 feet.

Magpie River and Wawa Creek.

Michipicoton to Missinabie by Wawa.

From the mouth of the Magpie river an old tote-road runs in an almost straight line to Wawa lake, five miles to the northeast. The road crosses a sand plain for the whole distance, and except for a few hills it is an excellent one. For the greater part of the distance it is perfectly level. The sides of some of the hills are wet, but the old corduroy has not yet decayed too far. The plain is sparsely covered with timber. Much of it has been burned over, but young spruce is growing thickly.

Tote-road to Wawa lake.

Several distinct terraces were noted in crossing the plain. The heights were determined by aneroid, in most cases more than once. The results are given in the following table :

Lake Superior	0 feet.
First plain	Undetermined.
Second plain	84 feet.
Ridge	100 "
Ridge	110 "
Third plain	145 "
Fourth plain	224 "
Fifth or main plain	316 "
Summit	350 "
Wawa lake	328 "

The first beach is not crossed on the tote-road, but it can be easily seen a little to the south, where the Indian village stands. The bank at the back has all the appearance of river erosion. The top is the second plain, gently rising by a succession of ridges. Along the front is a small ridge of light sand, suggestive of an old lake bar. A short distance back a low ridge resembling a railway embankment runs east and west. The top of this ridge is 100 feet above the river. Back of this there is another ridge, less distinct and about 10 feet higher. At the back of this plain and its ridges is a steep bank running N. 140° E. This probably marks the summit of the Nipissing beach, which at Peninsula is 110 or 115 feet above Superior. Taylor (Am. Geol. xx p. 127) describes this beach as follows : "Its great length, compounded of many beach ridges forming beach plains, gives it a physiographical prominence that is not equalled by any other shore line of the lake region." The top of the bank is a plain 145 feet above the river. In a short distance another rise leads to the fourth plain, 224 feet above the river. A little north of the road a hill rises steeply from this plain. I found the top to be 512 feet above Superior. From the summit a good view was obtained of the valley of the Michipicoton and of the southern part of the bay. The third terrace could be traced for some distance in a line running 140°. The rocks were all Huronian schists striking 90°. The fifth terrace is about two miles inland. The fourth plain extends to the foot except where crossed by a creek. The bank has a declivity of about 45° and bears 110°. Lake Superior is visible from the top. From here the plain is very level until within a short distance of Wawa lake, where it rises 25 feet. The whole of this sand deposit is doubtless the result of melting ice. The terraces were probably formed in a rough way when the sand was laid down. Later the waters of lake Superior smoothed off the uneven places and cut the terraces more uniformly.

Terraces and sand plains.

Wawa lake is a body of very clear water, extending about five miles to the northeast. The original Indian name was Wawagonk, as it has been spelled on the published maps. Mr. Ross of Missanabie told me that it should be Wawungonk, that is the place of clear water. Whatever it once was, it is now the short Wawa. The lake is surrounded by high hills except at the southwest end, where the sand plain closes the valley. It receives almost no tributaries, so that the stream flowing out is quite small. Indeed with strong winds from the southwest the flow is stopped. Soundings at the lower end showed that away from shore the bottom was a level plain 93 feet below the surface. The height of the lake as determined by three fairly concordant aneroid readings is 328 feet above Superior.

Wawa lake and Wawa city.

At both ends of the lake are docks once used by a steamer now lying on the beach at the west end. A row of log cabins was also here, but they have been used as firewood by the prospectors who have made this point their camp. This was the site of Wawa city. At the time of my visits there was one log shack and 20 to 25 tents. At first many of the prospectors lived here, but later they moved back into the bush nearer their work.

I visited a number of the claims in the vicinity and took samples of the rock and quartz. A few notes on these are here given. Captain Curry's claim lies about a mile northwest of the old dock. The country rock is a quartz porphyry running 85°. The quartz is exposed as a vertical wall 50 feet high along the top of a considerable hill. At the time nothing had been done, as the vein had only been discovered a day or two previously.

Mining claims near Wawa lake.

A mile and a half south of Wawa city is a claim owned by Hamilton Baluss. The vein runs 140° in quartz porphyry. The quartz is three to 10 feet wide, and had been traced about half a mile. It carries a little pyrites and specks of free gold are visible.

The Dickinson location, Y103, is on a point on the south side of the lake. It was first discovered by the Indian Teddy, and sold by him to J. M. Dickinson. The latter transferred the property to J. J. Mackey and J. L. Caverhill, who have done a little stripping. It was the first discovery in the region, and promises to be one of the richest A sample composed of small fragments taken at random from many points of the veins yielded in my laboratory $65.50 to the ton Eleven assays made for Mr. Mackey ran from $13 to $145 to the ton. Close to the shore on the east side six veins have been uncovered. Four of these are fairly parallel, running to the northeast and dipping 35° to 45° to the northwest. Where the veins outcrop on the side of the low hill the parallelism is apparently disturbed, but probably very little, if at all. The shore vein runs a little north of east and cuts two of the veins just mentioned. The sixth vein is a short cross vein at right angles to the parallel ones and joining the second with the shore vein. From the shore to the vein farthest inland is perhaps 150 feet. The middle vein had been stripped about 300 feet; the others less. The veins are about alike in width, varying from one foot to four feet. The average width is hard to state, but it is considerably less than the higher figure. There is considerable pyrites in the quartz, but unequally distributed. The quartz itself is usually rusty. Free gold is found pretty much along the surface of all the veins. Every fresh arrival at Wawa went at once to Dickinson's and chipped off some free gold specimens. I obtained a specimen showing free gold in tourmaline. The rock is a somewhat massive hornblende schist striking 40° to 50°. It carries a little pyrites. On the other side of the point are two more veins striking northeast. The glacial striæ here bear 68°. On the north shore striæ bearing 50° were noted. A half mile southwest of Dickinson's I went inland. A half mile south, at the corner of locations WR59 and 60, I found quartz porphyry striking 50°. This north and south line crosses a number of valleys with vertical walls, making progress very slow and difficult. A half mile east of this I reached J. H. Johnston's claim, registered as No. 26. The vein appears on the side of a low hill and bears 30° in quartz porphyry. Almost no stripping had been done, but I thought the vein might be 12 feet wide. The quartz is quite rusty.

South of this, on a continuation of the same vein, are claims 39 and 75, taken up by Lawlor and Lauzon for the Great Northern Mining Exploration and Development Corporation. A little development had been done at the junction of the two claims at the south end of a small lake. The vein forms the wall of a small cliff of quartz porphyry, which bears a little east of north. Mr. Lawlor has had the following assays: $284.70 from small pieces of quartz showing no free gold; $324.30 from a large piece showing a speck of gold: $692.90 from a piece showing a number of specks of gold. An assay made from a sample taken by myself and showing no free gold gave only a trace. Mr. Lawlor said that he could pan gold from a great many stringers of quartz in the vicinity. The main vein has been traced over a mile.

A mile to the southwest the strike of the quartz porphyry becomes 70°, and a little

farther it becomes 90°. Here it is underlaid by chlorite schist dipping 45° to the south.

The old Johnston locations.

At the east end of Wawa lake are the locations numbered 3 to 6 and 9 to 14, taken up by John W. Johnston of Detroit about 1871-2-3. He was said to have done considerable development work and to have abandoned the properties as useless. I visited all the workings that could be pointed out by old employés, and they are certainly not extensive. On location 5 (?) two pits had been sunk, each five feet deep in quartz porphyry bearing 70°. A quartz vein 12 inches wide could be seen in the wall of one. Small pieces of quartz on the dump carried a little iron and copper pyrites. An assay of this quartz for gold yielded nothing. Louis, my guide, informed me that his father was one of Johnston's employés, and that he was engaged in packing out the ore in bags. Louis thinks that Johnston was looking for silver and copper, and other natives say the same. A considerable clearing was made on this location, as the stumps still testify. Small trenches were dug in the alluvial material in search of veins. No buildings were erected. A small wharf of logs and stone at the foot of a sandy bay marks the path to the old pits. In one of these I noticed a birch 15 feet high and three inches through. Another location near Michipicoton is described later.

Claims north and east of Wawa lake.

S. Barton has a claim 80 rods east of Wawa lake, on the portage. The country rock is a diabase carrying some pyrite. The vein is eight feet wide and dips 45° to the west. Over the hill to the north is claim 13, called the Little George by the discoverer, C. W. Bailey of Oscoda, Mich. The quartz is exposed on the wall of a cliff facing north. It is a wedge in shape, one foot wide at the top and 18 at the bottom. The country rock is a diabase carrying considerable pyrite. The quartz carries pyrite, chalcopyrite, pyrrhotite and malachite. A sample taken for assay yielded only a trace of gold. The foot of this hill is a talus of large angular blocks covered with moss. Walking is not only difficult but dangerous. A false step or a slip and one's leg is wedged in a crack between sharp rocks. In these crevices ice remains all summer.

Near the eastern boundary of Johnston's location 9, Albert Harvey of Wahnapitæ and Robert Holding of Chapleau found carbonaceous shales. The shales run about east and are exposed along the side of the hill for some distance. In places they are rich in pyrites, and this has weathered to a red ochre. Neither the coal nor the iron is of any value.

The tote-road running north from the east end of Wawa I followed for some distance.

On the tote-road to Grasett lake.

A few chains inland a small sand plain spreads out among the hills at a height of 72 feet above Wawa. Here are the ruins of quite a hamlet, a relic of the days of the construction of the Canadian Pacific. Where a creek crosses the plain some Californian prospectors had been searching for placer gold, but in vain. Passing through a narrow defile a triangular lake nearly two miles long is reached. It is 169 feet above Wawa. A hill of diabase at the east of the pass is 393 feet above Wawa.

The tote-road continues along the southwest shore of Eleanor lake and is so overgrown with willows that walking is very difficult. A narrow band of slates was crossed; then chlorite schists striking 95°. Some prospectors met in here had been unsuccessful in locating any veins. Where the tote-road crossed the sand plain good hay was growing on the cleared parts.

Across the narrow end of Wawa another tote-road began. This one lead to Manitowick, along the shores of a series of small lakes which have long served as a canoe route. The first portage follows the tote-road through a pass to the east as far as a small lake 105 feet above Wawa. The portage may be crossed in 10 minutes with a pack. To the east of the lake is a level sand plain which the tote-road crosses in a line running 58° after it has skirted round the first lake. The second portage follows the tote-road for about a mile and then turns off to the east.

Shortly before the turn the road crosses a small creek flowing south. Two weeks later Mr. Amey showed me at Michipicoton a small sample of native mercury which he claimed to have panned from this creek. It is exceedingly improbable that native mercury occurs

here, but it is perhaps worthy of note that others may examine the place. Native mercury has been found in the drift in a few localities. Its occurrence here in minute quantities may be due to some prospector.

A portage of two minutes leads to the third lake, which is half a mile long and 15 feet above the second.

The portage from the third to the fourth lake is nearly one mile long. The trail, which is south of the tote-road, is over rough bouldery ground. Here I met Mr. Peter McVeigh and his party. To the west of the portage Mr. McVeigh had found a deposit of quartz 25 feet thick. Specimens he showed me were heavily charged with pyrites. Mr. McVeigh had previously explored the east end of Dog lake. He had found there 10 quartz veins six inches to one foot wide. The quartz occurred in granite and carried very little pyrites.

The fourth lake is half a mile long and bears 68°. Boulders and gravel surround it, but rocky hills are close at hand. This lake and the next, and probably the third also, have no outlets. A short portage over a moraine leads into the fifth lake. This occupies a kettle hole about an eighth of a mile long. The portage from here into Hawk lake takes one and a half minutes to cross. The tote-road which has been to the north of the water courses here crosses to the south side. Hawk lake is six feet below the level of the fourth and fifth lakes.

At the west end of Hawk lake intrusive granite is seen. Angular fragments of greenstone are found to be included. The latter is in part a diabase with porphyritic crystals of felspar. The intrusive rock is in places an undoubted gneiss. Standing on a hill at the shore, the gneiss can be seen at least half a mile to the west. The contact crosses the tote-road probably to the west of the fourth lake. The area around the west end of Hawk lake is covered with boulders, mostly granite and gneiss, with some quartzite and some greenstone. South of the tote-road the rocks are entirely obscured by a covering of drift.

Gneiss or granitoid gneiss surrounds Hawk lake. At the outlet gray gneiss occurs on both sides of the stream. On the north side is a wall of gray granite. On the northeast Mr. McVeigh reported a vein of white quartz 10 feet wide. At the outlet the same gentleman found a quartz pebble carrying free gold.

Accompanied by Messrs. McVeigh and Cuthbert and my man George I attempted to reach the old location 223X, said to have been taken up for nickel. George had been engaged in its survey and was sure he could guide us in. We followed a sluggish creek with plenty of water for a mile and a quarter to the north. This creek has perhaps three times as much water as the stream which empties Hawk lake. From the creek we travelled northwest across a sand and gravel plain. A small lake occupies a depression in the plain a little west of the creek. Three-quarters of a mile inland a second lake was reached. Travelling here became difficult, owing to windfalls across the trail. I had the misfortune to strain my knee, and after going some distance farther had to give up. We reached a point a little over two miles from the landing place on McVeigh's creek, and just where the first Huronian rocks were seen. The trail we were following seemed to be leading us too much to the northwest, but George felt confident he was right. If so the location is laid down on the map too far to the east.

A small stream of clear water flows from Hawk lake to Manitowick and affords a canoe route. Great quantities of clam shells are found in these waters. Two-thirds of a mile from Hawk lake the first portage occurs. It is rough, but not hilly and may be crossed in six minutes with a pack. The fall is 10 feet. The portage is over granite. One-third of a mile below the second portage begins, which is about three-fourths of a mile long, and is well cut out but stony. It is on the south side and bears 65°. Two-thirds of the way down a small creek is crossed which flows into the main stream. At the foot of the portage is a small lake about one-eighth of a mile long and 36 feet below Hawk lake.

Along these two creeks were stakes claiming the country for a half mile on each side and for a mile in length for C. I. Amey. At the foot of the main stream there were several pits one to three feet deep in the glacial gravel over which the

The alleged Placer claims

stream is running. It was from these that the placer gold of Mr. Amey is said to have come. As already explained, this is not the case. Indeed I do not think that any placer gold has yet been found in the district.

On the stream below the next lake a short portage of three chains is necessary for heavily loaded canoes. The fall is three feet. The cliff to the north is a gray biotite gneiss. At the foot of the portage is a beautiful lake which I have named Miller lake, after one of my travelling companions. The lake is three-fourths of a mile long and bears 60°. The outlet is to the north, in the second bay from the northeast end. As the upper part of the river is obstructed, a portage is made from the extreme northeast. This portage, known as Pine portage, is smooth and well cut. It may be crossed in seven minutes. A marshy bay 10 chains long leads to the river. The route might easily be missed in ascending the stream.

One-third of a mile below another lake is reached which has been named Blue lake, after my other travelling companion. The lake bears northeast and is about half a mile in its greatest length. To the north is a cliff of gray Laurentian gneiss about 250 feet high. Sand and fine gravel form the shore at the north. A bank 30 feet high is exposed where the river leaves the lake. After meandering for about one mile in this sand plain the river reaches Manitowick. This lake I make 40 feet below Hawk lake.

At the mouth of the Hawk river I met Mr. Paris and party, who had been prospecting for 11 days. They had been searching in granite and gneiss along the chain of lakes just described, and had found nothing at all. This is the usual experience of those who have prospected the gneissic country.

On the north side of the west end of Manitowick are bands of diabase six, 10 and 200 feet wide, enclosed in granite. About half way up the lake on the northwest shore the contact of the granite and schist occurs. The granite is the later. The schists strike about east, as do those on the opposite side of the lake. Near the contact the schists dip 45° to the north.

Northwest shore of Manitowick Lake.

On the north of the contact Allan and Nolan have staked some claims. No work had been done on them and I did not visit them. Mr. Allan states that he has two veins each three feet wide which can be traced for a mile. Samples which he showed me were heavily mineralized. One which I took contained about 10 per cent. of galena and yielded $2.67 in gold.

Farther to the northwest F. D. Grant has located two claims. One is on a bedded vein running 110° in hornblende schist. The other, which I did not see, is said to be four feet wide and to carry free gold.

One-half mile inland is a lake nearly a mile long and a quarter wide, bearing east and west. On the south is a chlorite schist striking 100°. One mile inland is a felsite schist striking 110°. On the north of the lake is a quartz vein four feet wide.

The remainder of this trip through Manitowick and Dog lakes has been incorporated with the description of the trip from Missanabie to Michipicoton. By keeping men and supplies well in advance I was able to make this trip from Michipicoton to Missanabie in a little less than three days. Of this time two whole mornings were devoted to trips inland, and many other shorter stops were made. Sunday, September 26, was spent at Missanabie.

Missanabie to Magpie Lake

After purchasing supplies on Monday morning we started again for Michipicoton by way of the Magpie river. I was warned that I would have some difficulty in getting across to the head waters of this stream, and it proved to be the case. We coasted along the north shore of Dog lake and through the narrows leading into Loch Alsh. Both shores are Huronian. Glacial striæ north of Rabbit island bear 45°; the schists here strike 78°. At the narrows are a number of felsite dikes striking 153°.

Head waters of Michipicoton river.

The canoe route to Wabatongusheen is not up the Loch Alsh river as would be expected, but by portage from the extreme west end of Loch Alsh. It was at this point that the volunteers in 1885 left the train and were driven across a gap of 42 miles. The portage begins in a sandy bay and passes at once over the railway track and up a steep hill. It was crossed in 13 minutes with a heavy pack.

The rock on the portage is a chlorite schist striking 63°. A lake six chains wide was crossed, and then another portage six minutes long over a burnt hill brought us to a second lake. This lake, an L in shape, is 62 feet above Dog lake and about one-quarter of a mile each way. The stream flows in and out at the northeast corner. A narrow channel with little current connects with the third lake an eighth of a mile long. A third portage three chains long leaves this at the northeast angle. Wabatongusheen lake I made 10 feet higher, that is 72 feet above Dog lake. The lower end of the lake is in chlorite schist striking 108°. At the first narrows directly north of the outlet is a gneiss striking 128°. From here to Magpie lake almost the only rock was this gray gneiss. Wabatongusheen is surrounded by low hills well wooded with spruce and poplar, though burnt in a few places. The lake is named from the sandy narrows connecting the two parts. It is 14 miles long and is the source of the Michipicoton.

Crossing the divide to Hudson bay waters.

At the north of the lake we spent some time looking for an old trail leading to Pechonegoness lake. I went one mile west on low, swampy ground, but failed to find the lake where it was shown on the geological map. This having failed, I went north into Oba lake, expecting to cross from its southwest corner into the foot of Magpie lake. My Indian at first told me that this was feasible, but on reaching Oba he said he had tried a few weeks before and failed. As a result we had to go to a portage at the north end of Oba many miles out of our way. Between Wabatongusheen and Oba there are five portages. The first one is about a third of a mile in length. The trail is wet, stony and poorly cut out. It crosses the divide, which is not 10 feet above the lake, between the Superior and Hudson Bay slopes. A small pond at the north end is crossed and then a little creek followed to Oba. The second portage along the creek through a tamarac swamp is 10 chains long. Six chains down, the third one begins. It is about one-quarter of a mile long. The fourth portage is six chains and the fifth eight. The whole distance is about two miles. It took us three hours to cross, making two trips on the portages.

Oba lake is about 12 miles long, divided by a narrows into two equal parts. An aneroid reading gives it the same elevation as Wabatongusheen. On the west side it has been pretty thoroughly burnt. The rock surrounding is a gray gneiss. On the south side a prominent dike of diorite was noticed. Just south of the narrows a creek enters from the west and we pushed up some distance, believing it led to the portage. The creek is really dead water meandering in a grassy meadow. I afterwards learned that a portage could be made here, but that the trail had not been used for years.

Oba lake to Magpie lake.

Above the narrows we discovered an Indian hunter's lodge and gladly made inquiries. The old man, named Gebo, was not content to point out the way but insisted on going with us. On parting with him three hours later I learned the reason. He was suffering with quinsy, and followed me hoping that I would give him medicine.

The canoe route follows a stream which enters a grassy bay about two miles north of the narrows. The creek winds about in a burnt tamarac swamp for about five miles. Near the end of the canoeable part the stream divides. The larger branch comes from the south. The northern or right-hand one is to be followed. In a few yards it becomes overgrown with willows so that the canoe is propelled with difficulty. The portage begins at the foot of a well burnt hill.

For several miles around this point the country had been burnt thoroughly bare. Low rounded hills of gneiss were seen on every hand. In the hill at the portage there were some small masses of mica schist. Crystals of felspar three inches long were seen here.

The first portage is along the northeast side of the river for a quarter of a mile. It is over well-burnt land, covered with soil and some boulders. Across the creek, which is here several canoe lengths in width, the second portage begins. There is no regular trail. The course is northwest through a burnt swamp and over a hill. There is much fallen timber to be climbed and boulders are numerous. The creek we ascended turned off to the north and an arm from Magpie lake continued as a swamp nearly reaches it.

The divide, again a continental one, cannot be over 10 feet above Magpie lake. An aneroid determination made Magpie lake 33 feet above Oba, but this is certainly excessive. The barometer was rising all day. Five or 10 feet would be nearer the mark. This portage must be a mile and a half long. Its roughness and length were very fatiguing. It took six hours of hard work to get from Oba to Magpie, the men making two trips on the portage. Near the Magpie end of the portage a small mass of included Huronian schist was noticed.

Grasett to Michipicoton

Magpie lake is about 15 miles long and three wide in its broadest part. It consists of two parts almost equal in length, united by a narrow channel. Gray Laurentian gneiss surrounds it on all sides. On a small island two miles from the north end and close to the west shore a mass of greenstone with porphyritic felspar occurs. On an island towards the north. East of the narrows is a sand bank 30 feet high. From the southwestern end of the lake a canoe route of two miles leads to the railway track one mile east of Grasett station.

Magpie Lake.

The Magpie river flows out at the southeast angle and crosses the railway at a point five miles east of Grasett. From the lake to the railway, a distance of two miles, the river falls perhaps three feet, and just below the bridge about eight more. The height of the river at the bridge, according to the C. P. R. profile, is 531 feet, and so Magpie lake is 534 feet above Superior.

Descent of Magpie River.

For the convenience of other travellers I give here in tabular form a brief description of the portages which we made on our trip down the Magpie. The number depends very largely on the amount of water in the river, and as this was low in September we lightened our canoes at several places not mentioned in the table. There are, in addition, very many strong currents which in coming up stream might necessitate portaging. Exclusive of the rapids the stream falls 219 feet in 60 miles, or over 3½ feet a mile, while theaggregate of the falls is 315 feet.

No. of portage.	Height of fall.	Portage on	Character of portage.	Approximate length.	Time to paddle between portages.
1	8 feet	east	good	8 chains	18 min.
2	2 "	"	"	2 "	31 "
3	5 "	"	stony	11 "	14 "
4	16 "	"	good	16 "	41 "
A pitch	2 "				52 "
5	Driftwood	east	good	5 chains	2 hrs.
6	15 feet	west	rough	11 "	5 min.
7	8 "	east	"	8 "	3 "
8	3 "	west		1 "	3 hrs. 40 min.
9	10 "	"	good	10 "	2 " 10 "
10	2 "	"	"	1 "	1 " 30 "
11	60 "	east	steep hill	20 "	5 "
12	73 "	west	"	20 "	10 min.
13	113 "	"	good	30 "	

At the north end of the lake the land, which is the watershed between Hudson bay and lake Superior, is low and swampy. At the centre of the lake there are high bluffs on the west. A glacial stria bearing 8° was noted

The only method available for measuring the distance between the portages was the time consumed in paddling from one to another. In our case the rate of travel was three to four miles miles an hour, depending somewhat on the velocity of the stream. Calculating in this way, I make the distance from Magpie lake to Michipicoton Post a little over 60 miles, following the bends of the stream. In a straight line the distance is about 44 miles.

At the first portage the railway cuts through a moraine on the east bank of the river. The top of it I found to be about 78 feet above the track, and so 111 feet above the river. The boulders were mostly gneiss and granite, though fragments of Huronian schists were very frequent. Pebbles of limestone were also quite easily found. Some of these resemble the buff-colored Devonian limestone of lake Winnipeg, and have probably come from the palæozoic area south of James bay.

Details of the portages.

For some miles below the railway crossing the Magpie is a series of narrow lakes only a few chains wide, connected by short stretches of current flowing over gravel and boulders.

At the top of the fourth portage the river skirts a sand plain 40 feet above the water. The plain seems to be of small extent and low ridges of gneiss are seen outcropping.

The fifth portage is caused by a tangled mass of driftwood which has lodged in the stream. The portage is short and good, but the obstruction might be removed with little labor. Three miles below recent fires had entirely denuded the gray gneiss, which could be seen for some miles inland.

At 11 miles below Magpie lake there is a large mass of Huronian schist on the west bank. The real contact is however five miles farther down. About a mile below this apparent contact the sixth portage is reached. The seventh and eighth follow in quick succession. Nearly three miles below a long series of shallow rapids can be run in high water. Our guides paddled and waded down while we walked along the bank. The walking on the east bank is fair, but there is no regular portage.

Sixteen miles from the outlet of Magpie lake the contact of the Laurentian and Huronian is seen in a high hill on the east of the stream. The strike of the rocks is 88°, and both to the north and south of the ridge is an extensive gravel and sand plain. On the north side the plain is nearly 100 feet high and has been terraced by the river. On the south the plain is more extensive. From the hill a number of kettle holes could be seen, and four or five miles to the east a considerable lake was recognized by the vapor rising above it in the early morning. The hill is seen on the west also, but at a greater distance. A strong current is the only obstruction in the stream. According to aneroid readings at the rapids and estimates for the current this point is 98 feet below Magpie lake.

For five miles the river runs through a sand plain covered with jack pine, spruce and a little tamarac. In places the sand is underlaid with stratified clay, which is quite free of boulders. Eight miles below the contact a small creek comes in from the east. At the ninth portage, two miles lower down, the rock is a chlorite schist striking 128°.

Below the portage is a narrow lake three miles in length. On the west side a creek comes in about two miles from the north, and up this the old tote-road to Grasett runs. To the south of the mouth is a steep hill 275 feet high. The strike of the rock, which is diabase, is 98°. At the south end of the lake, 29 miles from Magpie lake, the tote-road crosses to the east bank, which it follows for three miles and then strikes inland to the upper end of Wawa lake.

At the tenth portage a few straggling ash trees were noticed. As lower elevations were reached they became more numerous. From this point the river is surrounded by high hills until it reaches the Michipicoton.

The eleventh portage is over a hill 160 feet high. The river falls 60 feet in three main chutes, with rapids between. The lower fall, visible from the foot of the portage, is about 20 feet high. The hill, which is of gravel, is very steep and the portage is poorly cut out. One mile and a half below the rock is a chlorite schist striking 58°. The boulders are here mostly greenstones and quartzite, with little granite. Small quartz lenses are frequently seen in the chlorite schist.

Between eight and nine miles below the eleventh or Steep Hill portage a small stream enters from the east. A short distance below the strike of the chlorite schist was observed to be 68°. From here down there is a notable increase in the number of quartz pebbles in the bed of the stream.

At about 11 miles below Steep Hill portage a bank of stratified sand and gravel 40 feet high was observed. The lower 20 feet consisted of sand, then 10 of gravel and finally 10 of sand on top. Until the next portage was reached seven or eight miles down, these stratified gravels were seen at many points. On the lower gravel flats there is quite a growth of black ash. About 13 miles below this portage, or seven from Michipicoton post, a canoe route leads by trail and lake to the western end of Wawa lake.

A couple of miles above the twelfth portage a small band of conglomerate striking 148° was observed. A short distance below red granite was found. Apparently it is an eruptive mass of this rock which causes the fall at the twelfth or Contact portage a short distance below. The river here falls 73 feet in a succession of chutes and rapids. The gorge at the lower end is narrow and precipitous, and has been excavated along the contact of the granite and schist for some distance. Above the falls both banks of the stream are granite; below both are greenstone. The portage on the west side is over a steep hill of morainic material. Probably at one time this blocked the stream to a height of 40 feet or more, and caused the deposition in the lake above of layers of silt and peat now found in the banks above the falls.

The strike of the schists in the half mile between the contact and the thirteenth portages is about 165°. The last portage is down hill over a good trail for three-eighths of a mile to a point opposite the Hudson Bay Post. The river falls about 113 feet in about one-eighth of a mile. Numbering from the lowest falls the heights are:

First falls	26 ft.	
Second falls	39 "	
Rapids	10 " (?)	40 ft.
Third falls	25 " (?)	
Rapids	5 " (?)	
Fourth falls	8 "	
	113	

At the foot of the kettle below the second falls the stream in autumn is confined to a narrow channel in very hard rock. On October 8 we found it to be 10 feet wide and six feet deep, but flowing with great velocity.

Michipicoton and Vicinity

Michipicoton was reached for the second time on October 4. Accepting the kind invitation of the Director of the Bureau of Mines, I staid with him at the old Hudson's Bay Post. The men were paid off the next morning and sent back to Missanabie with the canoes. Two days were given to writing a preliminary report on the district, and then the time until the arrival of the steamer was spent in examining the vicinity.

Michipicoton Post is situated on the south side of the river, half a mile from its mouth. It was one time quite a pretentious post, the buildings being large and numerous. All are deserted now except by a caretaker. Across the stream and east of the Magpie is the Indian village. The Indians, about 60 in number, are not on the reserve, which is on the north side of Michipicoton bay.

Michipicoton Post.

The river flows parallel to lake Superior for over a mile and about one mile inland. Between lies an irregular sand plain covered with spruce and other trees. Close to the shore it is entirely sand, but further in there is more loam.[6] At the Post excellent

[6] The plain on which the Post stands is thus described by Louis Agassiz, who visited the locality in 1848: "The lake shores present another series of interesting phenomena, especially near the mouth of larger rivers emptying into the lake over flats, where parallel walls of loose materials driven by the action of the lake against the mouth of the river have successively stopped its course and caused it to wind its way between the repeated accumulations of such obstacles. The lower course of Michipicoton river is for several miles dammed up in that way by concentric walls, across which the river has cut its bed, and winding between them has repeatedly changed its direction, breaking through the successive walls in different places. The largest and lowest of these walls, a kind of river terrace near the margin of the lake, shuts at present the factory from the immediate lake shore, and the river, which has cut its way between the rocks to the right and the walls, has left a bold bank in this dam on its left shore."—Lake Superior, p. 414.

potatoes were dug during my visit. Along the shore of lake Superior this sand beach extends for a mile and a half. Apparently it does not shelve out gradually, but dips suddenly. In the form of the beach and the character of the sands this resembles the terraces farther inland.

A small rocky island lies at the mouth of the Michipicoton. A few years ago the channel lay to the north of this islet, but now it is blocked by a sand bar and the river flows on the south. The channel is shallow however, and the waves break on the bar at its mouth.

The harbor for steamers is at Little Gros Cap, three miles west of the mouth. Boats of the fishing station have been transporting passengers and goods from Gros Cap to the Wawa landing. The old tote-road runs around the shore to the same point. The distance is somewhat longer, and the road is very rough. It is now overgrown with small brush, and the bridge across the Magpie is gone. The remains of the old camps of the teamsters can still be seen across the Michipicoton river from the Post.

Little Gros Cap harbor.

A little over a mile south of Michipicoton Post is a claim on which I found a quartz vein in granitoid gneiss. This area of gneiss is very small and is entirely surrounded by Huronian schists. The vein runs east and dips to the north. The quartz contains a little pyrite. A random sample contained $4 64 of gold. Nearly a mile farther southeast another sample of quartz was taken from a vein. This yielded $14.05 in gold. South of this is a small lake near the shore of which I took a sample of quartzose schist carrying 10 or 15 per cent. of pyrite. An assay gave $1.09 in gold. This lake is about a quarter of a mile long and the same wide. A very pretty creek leads to another lake below. Finally the stream emerges at lake Superior just where the sand beach ceases. The rock to the south is a talc schist.

Mining claims near the Post.

A mile up the Magpie is location B, taken up by J. W. Johnston about 1870-1. Guided by André, Mr. Blue and myself scrambled along the hill to the east of the Magpie to visit the old workings. It had been stated in the newspapers that thousands of dollars had been spent by Johnston, and we were anxious to see how and where. André, a native of Michipicoton island, remembers the mining. He says four men were employed for five months. The amount of work performed bears out this statement. We found a quartz vein in quartz porphyry exposed along the face of a cliff. The vein runs 80° and is about eight feet wide at the top where enclosed in the wall rock. The country rock is itself well mineralized. The only work was an open cut at the base of the cliff. This is now filled with quartz blocks which have fallen or were blasted off the cliff.

Old workings near the Magpie.

At Little Gros Cap.

On Saturday afternoon we went to Little Gross Cap to be ready for the steamer on Sunday morning. The rocks in the vicinity of the wharf are agglomerates striking 70°. One piece of rock, which was not in place but did not seem to have travelled far, was a schist containing a well rounded boulder of granite. Mr. Blue and myself attempted to reach the old hematite mine. It was blowing strongly, and as we could not paddle around the point we attempted to cross it. The neck of land is quite narrow, but the hills are very steep. We spent nearly four hours travelling around the cape, but failed to find the old workings. The next morning we plainly saw the dump from the steamer. J. W. Johnston was also interested in this property. Considerable work was done in testing it, but no regular shipments were made. Mr. Macfarlane made a report on the property which was published in the Geological Survey Report of 1866. As it is almost inaccessible now, it is reproduced here:

Exploring Little Gros Cap.

"Gros Cap forms a small peninsula which projects into the lake from the north shore of Michipicoton harbor. The iron mine is situated nearly but not quite at its southern extremity. The rock which forms this extremity seems to consist in places merely of pyroxene and chlorite, and at others it graduates into diabase and diabase schist. To the north of this the measures are to a great extent concealed, but vertical quartzite striking N. 63° W. protrudes, and a thickness of 150 feet would

The Hematite mine on the Cape.

seem to be occupied by a quartz bed similar to the one accompanying the ore. Succeeding, and probably underlying it to the northward, come about 300 feet of greenstone slate containing in places both calcareous matter and iron pyrites. This slate is underlaid by the ore bed, and where seen closest to the latter it strikes N. 25° W. The opening in the ore bed is about 10 feet wide, but this evidently does not include the whole of the ore bearing rock, which here seems to occupy a valley running northwestward between higher rocks. The foot wall of the opening, which consists to a great extent of ore, runs N. 37° W., and dips 66° southwestward. The excavation has been carried in on the strike of the bed for a distance of 120 feet, and with a depth of about 20, at a level about ten feet above the lake. This is on the east shore of the peninsula, and at a very convenient place for shipping ore. The latter is a compact hematite, which is intercalated with bands of quartzite. The thickness of the bands of ore varies from one-half to four or five inches. The quartz bands are sometimes crossed by small cracks containing calcspar, and this mineral is sometimes also present among the ore, which occasionally assumes in cavities a fibrous structure and botryoidal forms. The total thickness of the ore-bearing bed is about 60 feet, but the upper part is very poor, containing merely finely disseminated ore. An occasional band of pretty solid ore is found about six feet from the hanging wall of the bed, but here the quartz forms much the largest body of the rock. Here the strike is N. 20° to 30° W., dip 50° S. W. On following the depression which coincides with this strike the ore bed is seen to come out close to the lake, on the west side of the peninsula, but here the ore is very poor, consisting only of disseminated varieties. Various openings have been made on the strike across to the main working, but they were filled with water at the time of my visit. The ore was then daily increasing in solidity at the main working, and if the same improvement should continue a remunerative mine would soon be the result. This ore bed is underlaid by calcareous greenstone slates, of which a thickness of several hundred feet intervenes between it and a third quartzose bed, which has also been worked for iron ore at its outcrop near the lake, on the east side of Gros Cap. This ore bed seems to occupy a similar depression which strikes across to the west side, where a second quartzose bed containing ore is exposed. Here the rocks strike N. 30° W., and dip 45° S. W. At the point where this bed was worked, and from which some ore was shipped, the strike is N. 50° W , and the dip 48° S. W. The ore is of the same character as in the bed last described, but it is less rich. Underlying this bed, and continuing to the mainland, are found greenstone slates, varying in color from light to dark green, the strike of which is obscure owing to the prevalence of diagonal joints."[1]

Leaving Gros Cap on Sunday morning at 10 we reached Sault Ste Marie about two o'clock the next morning ; and leaving there on the noon train we reached Toronto on Tuesday morning October 12, or 48 hours from Gros Cap.

Summary of the Geology.

Rocks of the Mining Division

The great majority of the rocks of the Mining Division belong to the Laurentian or Huronian systems. Of the former system the almost universal rock is a gray gneiss, finely grained and not particularly well stratified. At many places it becomes thoroughly granitic in structure, and then is often coarser-grained. While usually a dull gray in color, there are limited localities where a red felspar has given a brighter tone to the rock. The Huronian rocks are more varied in character. Massive diorites and diabases, and hornblende and chlorite schists are most common. Slates, felsites, quartzites and sericite schists are less common. Conglomerates occur at Little Gros Cap and northeast of Manitowick. Around Wawa lake there is a considerable area of quartz porphyry. The east, north and west sides of the Division are composed of Laurentian rocks ; the Huronian system occupies the centre. The boundary between the two is at present very poorly defined. The accompanying map shows approximately the contact on the east. On the west and south almost nothing is known of it.

[1] Report Geol. Survey, Canada, 1863-6, pp. 130-1

At the contact of the two systems it frequently appears that the Laurentian gneiss or granite has been erupted into the Huronian rock, and is therefore later in age. This is well shown on the west shore of the Dog lake, a little north of Little Stony portage. Fragments of the green schists are also frequently included in the gneiss, as can be seen at the southwest end of Hawk lake. The schists are nearly always vertical, and strike in various directions depending on their relation to the intrusive granites. These eruptive granites in many cases shade imperceptibly into true gneisses, as on Hawk lake. In this respect they resemble rocks of Lake of the Woods, which Lawson has mapped as Laurentian. Though later in consolidation than the Huronian fragments they enclose, these granites and gneisses are in the opinion of Lawson of earlier formation. In the map I have followed Lawson's views, and so have colored as Laurentian a number of points shown as eruptive granite on Bell's map.

Eruptive granites in the Huronian

No case was observed of a granite eruptive in gneiss, though doubtless examples will be found. Several small and isolated areas were found in the Huronian. Two miles south of Michipicoten Post is a small area of biotite granitoid gneiss enclosed in Huronian schists. Dikes of diorite and diabase are frequently found in the Laurentian gneiss, as on the lower end of Manitowick and on the south shore of Oba lake.

In the report of 1863-6 Macfarlane calls attention to a point on the shore 25 miles from Michipicoten harbor where rocks of four ages occur. Fragments of porphyritic hornblende schists enclosed in a coarse-grained syenitic granite were both cut by dikes of granite containing much less hornblende. These dikes were in turn intersected by another of finer grained granite containing only traces of mica or hornblende.

Lying above the Huronian on the north shore of Superior is the formation designated by Logan as the Upper Copper-Bearing Series, but now known as the Nipigon or Keweenawan. It consists of sheets of lava with intercalated masses of sandstone and conglomerate. The formation is extensively developed on Michipicoten island, which belongs geographically to the Mining Division but is not included in it for administrative purposes. Within the Division only two small areas are known to exist They were described by Logan as follows:

Nipigon or Keweenawan rocks

"About two miles north of Cape Choyye a coarse grained bed, supporting some thickness of sandstone colored red, with white bands, and dipping a little to the south of west at an angle of about 10 degrees, abuts against a precipitous cliff of the older rocks, as if let down by a northeast and southwest fault. About nine miles to the south of this, the peninsula of Cape Gargantua, and some of the small islands immediately near display amygdaloidal trap, disposed in beds dipping to the south of west at an angle of about 40 degrees and resting unconformably on the gneiss."

Neither of these localities were visited, but the traps at the latter cape were clearly visible from the deck of the small steamer on which we travelled. It is this formation which on the south shore has proved so rich in native copper. Above the Nipigon formation the only deposits are those of pleistocene and recent times.

This Division like other parts of northern Ontario has been strongly marked by glacial action. To the north, near the height of land, the hills are for the most part low and rounded, and almost no talus can be found at the foot. The boulders everywhere are at least somewhat rounded. Towards lake Superior the hills are much higher and a talus of angular blocks is frequently found. The valleys of the streams are filled with glacial débris. The Michipicoten from Whitefish lake to its mouth winds about in gravel and sand plains. The Magpie for most of its course flows over gravel and boulders. In their lower courses these streams have cut deeply into the sand plains. At one point on the Michipicoten I measured a bank 132 feet high. The sand plain damming Wawa lake is 115 feet above the bottom of the lake. These sand and gravel plains occur very frequently. Many of them are of considerable size. That extending from Wawa to Michipicoten is five miles long. East of Wawa is another two miles long. At Pigeon portage, north of Hawk lake, and south of the contact on the

Evidences of glacial action

Magpie are other extensive plains. Kettle holes also are frequent in these plains. Examples occur on the tote-road leading east from Wawa lake.

Geologically the district very strongly resembles that of Lake of the Woods.

Physical aspects of the district

Physically however the country is different. High hills and steep cliffs are here the rule, while in Lake of the Woods low rounded hills immersed in water prevail. A more striking difference has resulted from the glacial action in the two districts. In Lake of the Woods most of the superficial material has been swept off to the south ; here the valleys are filled with glacial débris.

Along the height of land near the Canadian Pacific Railway the country becomes more level ; there are more muskegs and less gravel and sand deposits. Lakes are more numerous, with rocky ridges between, and the resemblance to the Lake of the Woods country is striking.

The divide of the waters flowing into Hudson bay and into lake Superior is in no place high. While it is generally supposed that a lofty range of hills is to be found, the reverse is true. Between Oba and Wabatongusheen lakes the summit of the swamp is not more than 10 feet above the lakes on either side. Between Magpie and Oba lakes the lowest land is perhaps 10 feet above water level. The same is true between the head waters of Missanabie river and Dog lake.

Mineral Resources.

The metal most likely to be found in large amounts in this district is gold, although discoveries of nickel, iron and copper have also been reported. Almost nothing is yet known definitely as to the occurrence of any of these. Gold has been found at a number of places in visible particles, and in all cases simply chipped from the surface. At no place in the Division had a pit been sunk to a depth of over 10 feet at the time of my visit. Assays alone are available for the formation of an opinion. These are at best somewhat uncertain, and in this case it is much more so. No property so far as I know has yet been systematically sampled. The reports of assays given me by prospectors were frequently made on samples showing free gold, and so are almost worthless. Eleven properties from which I took one sample each yielded an average of $8.17. Of these eight yielded less than $4. On the other hand there are properties assays of which have yielded over $100.

Gold, Nickel, Copper

Quartz veins occur in large numbers and of great size in parts of the Division. Around Wawa lake this is particularly the case. The enclosing rock is here a quartz porphyry for the most part. The veins generally run with the strike of the rock, but some cut across it. Frequently the veins form the precipitous sides of cliffs In this case they are easily traced, and often for a considerable distance. On the whole the quartz is white, and does not usually carry any large amount of sulphides. Iron and copper pyrites are the chief accessory minerals, though galena and pyrrhotite are occasionally found.

Gold-bearing quartz veins.

A comparatively small area has yet been explored, and this with no great thoroughness. Little over two months prospecting has been possible since the announcement of the gold discoveries. What little exploration has been done has been almost entirely confined to the vicinity of lake Wawa and the canoe route north to Missanabie.

So far the best finds have been made on the shores of Wawa and Manitowick lakes. Similar country rocks are however widely spread, and equally good deposits are quite as likely to be discovered in the future. In western Ontario the vicinity of the contact of the Laurentian and Huronian has proved to be the richest in gold. It is quite probable that the same is true of this region.

As to placer gold, the early reports have proved false. I panned in the beds of a number of streams, but did not get a color. Prospectors whom I met reported the same. The present streams are but reassorting glacial drift, and it is not probable that gold will be found in their beds.

As to other minerals, little can be said. Native copper occurs in considerable amounts on Michipicoton island. At Cape Gargantua a small area of the same Keweenawan formation holds a little native copper. A location was taken

Copper and other minerals.

up here years ago by the Montreal Mining Company, but little work was done. Small seams of chalcopyrite are said to occur in the green slates on the east of Michipicoton bay. On the north side of the bay and upon the Doré river is a location formerly examined by the Upper Canada Mining Company. The massive Huronian rock "is traversed by numerous quartz veins holding yellow copper ore, and more rarely the vitreous species." Some locations northwest of Hawk lake were taken up a few years ago for nickel. A small amount of development was done, and work stopped because of lack of funds, I believe.

The only iron deposit known is that on Little Gros Cap already described. North of Wawa lake a boulder of jasper and hematite, resembling the Minnesota rock was found.

Other Resources.

The only other industries at present carried on in the district are hunting and fishing.

Fishing and Hunting.

Along the east shore of lake Superior a series of fishing stations has been established by a Sault Ste. Marie firm, and large quantities of white fish and trout are shipped to Chicago and other markets. In the smaller streams excellent speckled trout are found.

Hunting is carried on by the Indians, but south of the height of land it is no longer very remunerative. The Hudson's Bay Company has closed its posts at both Michipicoton and Pic, but the one at Missanabie is still maintained.

The timber resources are not great. Perhaps one-half of the country is burnt over,

Timber and Soil.

principally to the north. Of the remainder, poplar and birch cover one-half, and spruce, jack pine, tamarac and balsam cover the rest of it. There is some cedar in the valleys, and to the southeast hard maple is found. The spruce is often 18 inches in diameter, and is of value both as mine timber and for pulp. At Bachewahnung bay, 80 miles southeast of Michipicoton, a large amount of pulp wood is cut yearly and shipped to Niagara Falls, N.Y. Near the railway the tamarac is used for ties. There are only isolated patches of red or white pine. There are quite extensive areas of level country, having a subsoil of gravel and covered to a depth of a foot or so with sand charged with organic matter. These plains lie among the hills, principally to the south. They are of the same origin and composition as the gravel hills of eastern Ontario. At Michipicoton Post potatoes have been cultivated with great success for a long time. Other garden vegetables also flourish. The country is however particularly adapted for raising hay, and along the tote-roads red clover and timothy are growing thriftily. The moisture of the climate ensures a certain crop every year. As streams abound on every hand, it will probably prove an excellent dairy country.

Water powers are of frequent occurrence. In a distance of 48 miles the Michipicoton

Water powers.

falls 489 feet, and the Magpie in a course of about 60 miles descends 534 feet. The numerous lakes at the headwaters of both streams tend to make the flow somewhat even throughout the year. The Magpie where it empties into the Michipicoton one mile from the mouth of the latter descends 113 feet in a distance of 10 or 15 chains. The three highest falls are 26, 39 and 25 feet respectively. Less than half a mile above this is a succession of chutes in which the river falls 73 feet in about 20 chains. Ten miles from its mouth the Michipicoton falls 184 feet in less than two miles. Towards the height of land the falls are usually not so high as near lake Superior, but are quite as numerous. Details of these are given in the body of the report, and some of the more important are marked on the map.

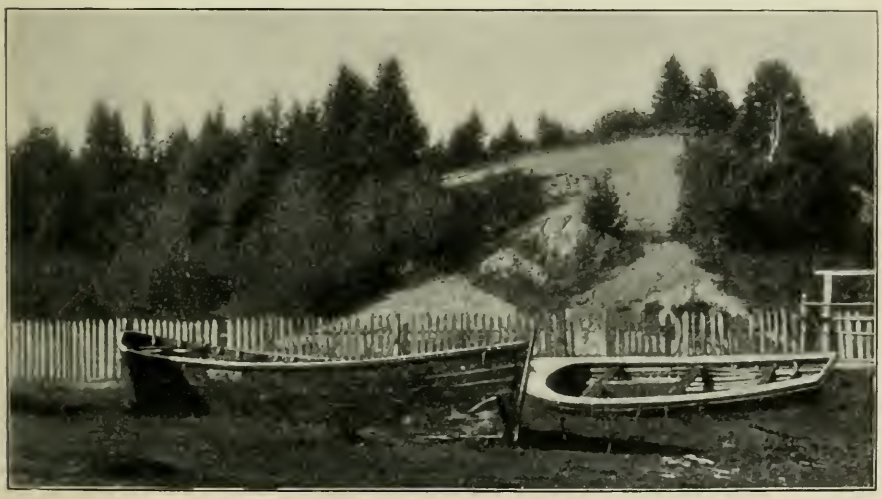
River Terraces at mouth of Toad River, east shore of Lake Superior. From Agassiz's 'Lake Superior.

Lake Terraces. Locality not specified, but apparently on north shore of Lake Superior, about three miles below the Petits Ecrits. From Agassiz's 'Lake Superior.'

Michipicoton Post in 1848. From Agassiz's 'Lake Superior.'

Michipicoton Post in 1897. Indian village and low mountain ranges in the background.
Photograph by Miller.

Michipicoton Post in 1897. Buildings on west side of the quadrangle. Photograph by Miller.



Sand dune west of Michipicoton Post. York boat and Clipper skiff in the foreground. Photograph by Willmott.

Indian Mission Church at Michipicoton, showing terrace in background. Photograph by Miller.

Indian burial ground at Michipicoton Post, north side of River. Photograph by Miller.

Indian Village at Michipicoton. Showing River and Lake terraces. Photograph by Willmott.

Missanabie, on the Canadian Pacific Railway. Photograph by Miller.

REPORT OF

THE BUREAU OF MINES

VOLUME VII THIRD PART

1898

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Seventh Report of

The Bureau of Mines

THIRD PART

To the Honorable JOHN M. GIBSON, Commissioner of Crown Lands :

SIR,—I have the honor to present herewith for publication Part III of the Seventh Report of the Bureau of Mines, comprising :—

1. Economic Geology of Eastern Ontario, being a Report on Corundum and other Minerals. By Prof. Willet G. Miller of the Kingston School of Mining.
2. Analyses of Corundum and Corundum-bearing Rock. By Dr. W. L. Goodwin of the Kingston School of Mining.
3. The Concentration of Corundum. By Prof. Courtenay De Kalb of the Kingston School of Mining.
4. Water Powers of Ontario. By Thomas W. Gibson, Secretary of the Bureau of Mines.
5. Placer Gold on Vermilion River. By Arthur H. Gracey.
6. Mining Schools and Mining Classes.

Statistics of the metalliferous mines and works of the Province for the six months ending June 30 of the current year are presented in the following table, together with the statistics of 1897 :

		1898. 6 mos.	1897. 12 mos.
Gold :			
Ore treated	net tons.	24,779½	27,589
Gold product	oz.	8,217½	11,412
Value of gold	$	133,744	190,244
Silver :			
Ore treated	net tons.	73	
Silver product	oz.	19,207	none.
Value of silver	$	10,632	
Nickel and Copper :			
Ore smelted	net tons.	55,871	96,094
Matte product	"	9,779	14,034
Nickel in matte	"	1,226	1,999
Copper in matte	"	2,234	2,750
Value of nickel	$	225,763	359,651
Value of copper	"	141,744	200,067
Iron ore	net tons.	13,032½	2,763
Value at mines	$	23,845	4,689
Pig iron :			
Ontario ores	net tons.	9,215	2,770
Foreign ores	"	29,565	34,722
Mill cinder, etc.	"	4,696	5,350
Pig iron product	"	25,423	24,011
Value of pig iron	$	305,083	288,128

Summarized by values, the statistics of the first six months of the current year and of the twelve months of last year are as follows :

	1898. 6 mos.	1897. 12 mos.
Gold	$133,744	$190,244
Silver	10,632	.....
Nickel	225,763	359,651
Copper	141,744	200,067
Iron ore	23,845	4,689
Pig iron	305,083	288,128
Totals	840,811	1,042,779

Comparing the second three months of the present year with the first three months, there is a considerable falling off in the production of gold, a result of unavoidable circumstances. The Regina mine was closed down on 1st April in order that a 30-stamp mill might be erected to replace the former 10-stamp mill ; it is expected that the new mill will be completed during the present month. The Foley mill has been shut down pending the transfer of the property to an English syndicate. The Deloro mill was destroyed by fire about three months ago, but it is understood that a mill of much larger capacity will be built in its stead. These circumstances account for the lessened gold production of the Province during the second quarter of the year. It will be observed however that the value of all metal products for the first six months of this year is 80 per cent. of the value of products for the whole of last year.

I have the honor to be, sir,
Your Obedient Servant,

ARCHIBALD BLUE,
Director.

Office of the Bureau of Mines,
Toronto, 19 August, 1898.

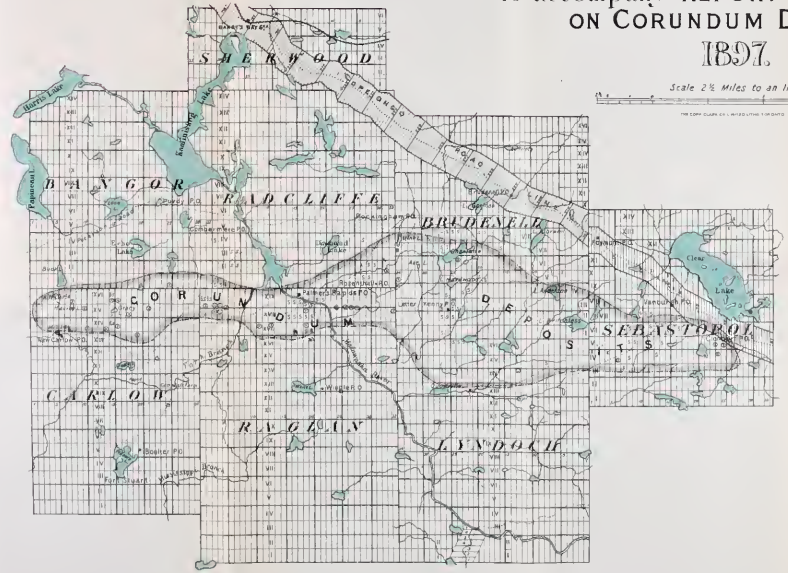
MAP

OF PARTS OF THE

COUNTIES of HASTINGS AND RENFREW,

To accompany REPORT of W. G. MILLER,
ON CORUNDUM DEPOSITS.

1897.



H. Mason 1897

Economic Geology of Eastern Ontario

Corundum and other Minerals

By Willet G. Miller

Introduction

THIS preliminary Report on the Economic Geology of Eastern Ontario deals more particularly with the occurrence of corundum in the counties of Hastings, Renfrew and Peterborough, but a few notes are also given on other minerals.

In October, 1896, Mr. W. F. Ferrier, lithologist of the Geological Survey of Canada, reported the occurrence of corundum in the township of Carlow, Hastings county.[1] This was the first occurrence of the mineral of any economic importance known to exist in Canada.

Considerable interest being taken in this discovery of the mineral by manufacturers of emery wheels and others, it seemed advisable that a careful examination be made of the deposit in order to learn something of its economic value. Moreover it was thought that a determination of the character of the deposit would be of assistance in the search for other occurrences of the mineral in the district.

The writer was accordingly instructed by the Director of the Ontario Bureau of Mines to undertake an examination of the corundum-bearing rocks and to search for other deposits of the mineral in the district. In addition to this he was instructed to make careful notes on deposits of any other minerals of economic importance which might be met with in the field.

The work was begun in the latter part of the month of June, 1897. A short account of the field work done up to the end of August was given in the Sixth Report of the Bureau.

[1] Summary Report Geological Survey of Canada, 1896, p. 5, and Sixth Report Bureau of Mines, Ontario, pp. 61-63.

On the way to the corundum locality a few days were spent in an examination of certain mineral deposits along the line of the Irondale, Bancroft and Ottawa Railway, more particular attention being paid to deposits of iron ore similar in character to some of those in the more eastern part of the Province on which the writer had previously done some work. These ores will be again referred to in this report.

In the early part of July a few days were spent in company with Mr. N. T. Armstrong in the township of Carlow, in an inspection of the occurrence of corundum reported by Mr. Ferrier and in an examination of two other occurrences of the mineral known to Mr. Armstrong.

On the 5th of July I left the field for Kingston, having to take charge of some classes in connection with the summer session of the School of Mining. On the 2nd of August I left Kingston for the field again and arrived at Combermere in the township of Radcliffe the following day. From this date till the 15th of October, with the exception of a few days which were spent at the meeting of the British Association for the Advancement of Science in Toronto, I was engaged in field work.

After having determined the mode of occurrence of the corundum, most of my time was spent in prospecting for the mineral in the northern part of the county of Hastings and the southern part of the adjoining county of Renfrew.

Outcrops of corundum-bearing rocks were found at different points across country in these counties for a distance of 30 miles, and in seven different townships.

On my way home from the field in October I made a hurried examination of a belt of rocks, similar in character to that in which corundum occurs, in some townships lying immediately to the south and west of those to which reference has just been made. After this I spent a couple of days in the township of Methuen, in Peterborough county, where corundum also occurs.

During most of the time I was in the field I was assisted by Messrs. R. T. Hodgson and W. C. Rogers, students of the Kingston School of Mining. I am much indebted to these gentlemen for the enthusiasm they showed in the work.

In November I returned to the district in order to get out some of the corundum-bearing rock for a mill test. Several tons of it were taken out and shipped to Kingston, where the test has been made under the superintendence of my colleague, Prof. Courtenay De Kalb, an account of whose experiments accompanies this Report. I am indebted to Mr. Wm. Mason, lecturer on Surveying, for the maps and sketches which accompany this report ; and also to Dr. W. L. Goodwin, under whose direction a number of analyses of corundum have been made.

My assistants and myself, during the progress of the field work, received many favors at the hands of persons living in the district, which I desire to heartily acknowledge.

Geology of the District

Time did not permit of a careful examination of the geology of the district outside the strip of country in which corundum-bearing rocks were found. Such an examination would moreover be superfluous, as the geology of the region in which the district is situated is being worked out by officers of the Geological Survey of Canada. Dr. F. D. Adams and Mr. A. E. Barlow are in charge of the work in the western part of the district, and Dr. R. W. Ells is making a study of the eastern part. An outline of the results of these gentlemen's work in the region has been given.[2] The work which they have thus far done is of a very important nature, and throws much light on the characters and relations of the Laurentian rocks. They appear to have proved that the term Hastings series is no longer needed, the rocks to which this name was applied by the earlier workers in the field being of the same age as those of the Grenville series. Thus an end seems to have been put to the puzzling Hastings series which has heretofore been of doubtful age

Work carried on by members of the Geological Survey.

[2] Annual Report, Geol. Surv. Can., vol. vi. (N.S.), Part J.
Am. Jour. Sci., July, '94.
Summary Reports, Geol. Surv. Can., 1895-6-7.

and position, whether Laurentian or Huronian. This taken in connection with the work previously done by Dr. Adams in determining the true character of the so-called Norian or Upper Laurentian makes our knowledge of this most ancient group of rocks much more definite. It has also been found that there is not the sharp division between the Grenville series and that of the Fundamental gneiss that one would expect to find in the field after reading descriptions in older works on the subject.

Archæan Rocks

Groups of the Archæan rocks.

The work of the officers of the Survey during the last few years seems to have proved that we have rocks of roughly three ages, in the Laurentian, viz.: (1) a lower group of igneous origin, the Fundamental gneiss; (2) a group, the Grenville series, of somewhat varied mineralogical character, consisting chiefly of metamorphosed sedimentary rocks, overlying the Fundamental gneiss; and (3) a group of rocks of igneous origin which have been more or less metamorphosed and which cut through the members of groups 1 and 2. It may be added that Dr. Adams and Mr. Barlow find evidence that the rocks of the Grenville series have to some extent sagged down into the underlying Fundamental gneiss at some period of their history through the latter group of rocks having been more or less fused or rendered plastic by the great pressure and heat to which they were subjected. The same relation is seen between what are known as the Laurentian gneisses and the members of the Huronian series in northwestern Ontario, a fact which was first pointed out by Dr. A. C. Lawson in a report which Sir Archibald Geikie in his great Text Book of Geology speaks of as a "remarkable essay."

We may hope that within a few years the workers in Archæan geology of the staff of the Geological Survey, having cleared up the history of the Laurentian, will explain to us more clearly than has yet been done the relation which this system of rocks bears to that which has been called the Huronian. It may be that then they will show that the term Huronian is no more required than Hastings, and it is possible that it will be found that what we now call Laurentian and Huronian are composed roughly of three great groups, the lowest of igneous origin, on which lies a group composed chiefly of metamorphosed sedimentary material, both being cut through by igneous rocks. Recent work has certainly simplified the theories concerning the origin of the different members of the Laurentian, and it is hoped that investigation in the near future by these same Canadian workers wi still further simplify our knowledge of the whole Archæan.

Palæozoic Rocks

Post-Archæan rocks of eastern Ontario.

In eastern Ontario rocks of later age than the Laurentian are found overlying them unconformably. These rocks are of Cambrian, Silurian, Glacial and Post-glacial age. Patches or outliers of Cambrian and Silurian strata are found widely scattered over the Laurentian, leading to the belief that at one time the rocks of the Laurentian were completely covered by Palæozoic sediments, but that these latter have since been to a large extent removed by agencies of denudation. In the adjacent part of the Province of Quebec the distribution of the Palæozoic strata over the Laurentian is similar to that of Ontario, and moreover the Palæozoic strata in this latter Province are sometimes cut through by igneous rocks. It will be seen, then, that there is a similar relation between the Palæozoic strata with the dikes which cut through them to the whole Laurentian, if not to the whole Archæan, that there is between the members of the Laurentian. In the case of the latter system of rocks we may consider it as before stated, to be made up of three divisions, a lower group, or what has been called the Fundamental gneiss, overlain by a group largely of sedimentary origin, forming what may be considered outliers over the underlying gneiss, and an uppermost group, the youngest of the three, composed of more or less metamorphosed igneous rocks which cut through the members of the other two groups. The Fundamental gneiss forms the floor on which the other members of the Laurentian have been laid down (or have cut through), just as

the Laurentian as a whole forms the floor for the Palæozoic strata, which are also cut through at times by igneous rocks.

Relations of Archæan and Palæozoic.

A parallel may be drawn between the history of the earth during Laurentian and Palæozoic times in eastern Ontario and human history. During the Laurentian period after the solid crust had been formed sedimentary material was laid down,—limestones, sand and gravel deposits,—and eruptions of igneous material took place. The Laurentian period lasted for a great length of time, and after the rocks had been folded, altered and changed and gone through a process of decay as it were, subterranean agencies having ceased their activity, another set of rocks, the Palæozoic and later, were laid down. Similarly in human history, civilization in remote ages appears to have reached a high state and then gone into decay, and upon its ruins has been gradually built up the modern state of society.

Corundum-Bearing Rocks

The band of rocks of Laurentian age in the northern part of the county of Hastings and the southern part of the county of Renfrew, in which corundum has been found, may be said to be made up of three important kinds, gneiss, syenite and quartz pegmatite.

What appears to be the oldest rock in the belt is dark colored and more or less gneissoid in structure. It is in all probability a metamorphosed igneous rock and might now be called gabbro-gneiss. In megascopic character it is pretty uniform throughout the belt. The dark colored minerals which predominate in it are hornblende and biotite, of which the former is in greater quantity. The other generally most abundant constituent is plagioclase felspar, but in some cases the felspar, or the more basic varieties of it, is decomposed. The percentage of silica in the rock agrees with the view that it is an altered gabbro or gabbro-diorite. Several examinations were made of specimens from different parts of the belt and these range in percentage of silica from about 47 to 53. This gneiss, the oldest rock in the belt, is cut through by a series of dikes or masses, which consist largely of felspar or felspathoid minerals in which occurs the corundum. In some cases these dikes are light pink in color, while in other cases they are gray or white, depending on the color of the felspar, but the pink colored rock is less abundant than the other. These dikes are interesting in several respects.

Gabbro-gneiss.

Syenite and Nepheline Syenite.

Syenite and Nepheline Syenite dikes.

Along the greater part of the strike of the dikes the rock has sometimes the character of coarse syenite, but in some cases it passes into nepheline syenite. In both varieties of rock corundum is found at times. Nepheline, a mineral which plays the part of a felspar in rocks, is a comparatively rare substance in many parts of the world. Some nepheline holding rocks when weathered have much the appearance of crystalline limestone, and are apt to be mistaken for this rock. It is not surprising then that some of the thrifty German settlers of South Renfrew in their desire to obtain lime for building purposes should have collected pieces of nepheline syenite and heated them in kilns. The writer saw two or three kilns where attempts to burn this rock into lime had been made. One farmer told him that they had heated the rock in the kiln, with true German persistence, for five or six days, and that if Sunday had not then come on they would have continued "firing up" in their endeavors to reduce the rock, which they so firmly believed to be limestone. One interesting result has been produced by this heating of the rock, as in some boulders the nepheline has been fused while the felspar remained comparatively unaffected and was left as a skeleton of the rock. Some pieces of the rock of considerable size which have not been subjected to a high enough heat to fuse the nepheline have taken on a blue or greenish color over the greater part of their surface, causing them to resemble the sodalite which occasionally accompanies the nepheline. In this connection it may be stated that another mistake concerning the nature of nepheline was made at one of the mica mines in the township of Methuen, which will be referred to later in describing the occurrence of corundum there. At this mine the nepheline occurs in coarse, massive form in narrow

dikes. It was mistaken by the owner for a very pure and valuable variety of felspar, and he proposed to ship it to Detroit and use it in the manufacture of porcelain. It would be interesting to know what would have been the result of this experiment, whether as interesting results, to the mineralogist at least, would have been obtained from this attempt to make the mineral nepheline serve some useful purpose as were obtained in the attempt to burn it into lime. Cases such as these show the need there is for the dissemination of at least a little accurate knowledge concerning minerals and the methods of determining them among the inhabitants of our mineral districts, which indeed occupy much the greater part of the Province. A little knowledge concerning the hardness of minerals alone would often save much loss of time and expenditure of money, to say nothing of the evil effects resulting from the raising of false hopes. During last summer the writer was shown over half a score of different minerals and rocks which the possessors believed were corundum. If they had known anything of the hardness of minerals they could easily have found out their mistakes for themselves.

As has been already stated, the most abundant constitutent in the group of igneous rocks in which corundum occurs is felspar, but this is replaced to a greater or less extent in some cases by the felspathoid mineral, nepheline. The other important constituents of this group of rocks, outside of corundum, are black mica, hornblende, which is sometimes represented by its very basic variety, hastingsite, and white mica. Quartz has never been observed by the writer in any hand specimen of rock taken from these dikes or masses.[3] These dike rocks, if we leave out of consideration the occurrence of corundum in them, which of course lowers their acidity, may be described as syenites. Three or four varieties may be made of these. In some cases the rock is composed largely of felspar; at other times it contains mica or hornblende, and could then be called a mica or hornblende syenite; while, where the nepheline comes in, we have nepheline syenite. Magnetite is quite abundant at times. Pyrite is present in rare cases, and there is considerable variety of secondary minerals more or less micaceous in character, which have not as yet been worked out. Where the syenite occurs in association with garnetiferous rocks, as in the northeastern part of Raglan, it carries garnet. Crystals of zircon, some of which had a diameter of one-eighth of an inch, were found in the syenite at one locality in Dungannon. Sodalite is sometimes present in the nepheline syenite. As the syenite on analysis appears to contain only a trace of magnesia the poorness of the rock in spinel, which so frequently accompanies corundum in other districts, is accounted for.

Various forms of Syenite.

In general it may be said that the corundum occurrs more abundantly in the ordinary syenite than in the nepheline syenite, but the crystals of corundum are usually much better formed in the latter than in the former. The corundum-bearing dikes vary much in width, which is usually some feet. In one case the writer observed a clear and well defined dike on the side of a hill in the thirteenth concession of the township of Carlow, whose width was only 1¼ inch and which had corundum studded pretty thickly through it. Other well defined dikes had a width of five or six inches.

Occurrence of corundum in Syenite dikes.

There are many dikes similar in character to those in which corundum occurs which do not contain this mineral. It may be present in one part of a dike and absent in another. It is frequently seen to have segregated in lines or patches through the rock, causing the rock to be richer in some parts than in others.

Both the nepheline syenite and what has here been called the ordinary syenite often occur in broad dikes or masses, and it would be possible for one not making a careful study of the district to conclude that these two rocks belonged to different periods of eruption, or possibly came from different magmas.

[3] As however the corundum-bearing dikes are frequently cut by quartziferous pegmatite, hand specimens may be obtained from the contact which show the two minerals, quartz and corundum, closely associated. The two kinds of dikes, quartziferous and corundum-bearing, frequently resemble each other rather closely in coarseness of grain and in color.

Sometimes the one rock passes somewhat sharply into the other in the same dike or mass. In this case if the line of passage is obscured one would be apt to conclude that the rocks belonged to different periods of eruption. But we have an "ear-mark" as it were in the occurrence of corundum in both kinds of rocks which at once attracts attention and causes one to look further into the relations existing between them. Having found that the nepheline syenite passed into ordinary syenite, and vice versa, in some cases following along the strike, the writer made use of this knowledge in prospecting for corundum. If a mass of nepheline syenite containing no corundum were found the dike or mass in which it occurred would be followed up with successful results in some cases, the corundum coming in when the nepheline became less abundant or absent. In the case of one broad dike or mass in the township of Lyndoch, coarse nepheline syenite was found outcropping at the road side. After following the dike for about a mile, until nepheline was no longer observed on the weathered surface of the rock, corundum was found. In the case of other dikes search was rewarded with success in the same way.

A key to prospecting for corundum

Granite and Syenite.

In somewhat close association with the syenite dikes of the corundum belt in parts of the district is a light colored granite. This rock in the field and in hand specimens resembles somewhat closely the finer grained varieties of the syenites. Indeed it was often only after careful megascopic examination that the two rocks could be distinguished, quartz of course being present in the granite and never, so far as the writer has observed, in hand specimens, in the syenite. The lighter colored syenite and the granite both frequently have an ash-like appearance on weathered surfaces. As corundum has not been observed in the granite, it is important for the prospector to distinguish this rock from the syenite, which closely resembles it

Avoiding the granite.

The relation which the granite bears to the associated syenite was not determined satisfactorily, chiefly on account of lack of time. The writer's work in the district was mainly of a prospecting nature, and had for its object the examination and discovery of deposits of corundum. As this mineral was found in a number of new localities in the district, and as one "find" led on to another, there was little inclination to turn off from the main object of the work to examine the character or relations of rocks in which the mineral sought for was not to be found. Whenever therefore the granite referred to was met with, some other direction was taken and an outcrop of syenite was sought for. It would not be surprising however if it were found on future work that the granite and the two varieties of syenite were of one period of eruption. There is probably not much greater difference between the acidity of the syenite high in felspar and the granite than there is between the acidity of the former and the syenite, which sometimes contains a very high percentage of nepheline. We have in the case of the granite however no mark by which we can connect it with the syenites such as we have in corundum in the syenites, although in general appearance, as before stated, it resembles some varieties of them closely.

Pegmatite Dikes and Limestone.

In addition to the syenite dikes and masses, which cut the dark colored gneiss, there is another set of dikes whose relation to both of these rocks is easily made out. These dikes are quartz pegmatites, or coarse granites, and are younger than the corundum-bearing dikes, which is shown by the fact that these latter dikes are often cut by them. The quartz pegmatites are usually light pink in color and resemble in general appearance some of the coarser pink varieties of the corundum-bearing dikes. These coarser varieties of the latter dikes may also be spoken of as pegmatites. The quartz-bearing dikes contain as essential constituents in addition to quartz, felspar, which is usually the most abundant mineral present, and hornblende, which is usually pretty badly decomposed. Magnetite is a frequent accessory mineral in these pegmatites. Two or three trap dikes were observed which appear to be of late

Quartz pegmatite dikes.

origin than the corundum-bearing dikes, and probably also than the quartziferous dikes.

Areas of crystalline limestone.

Crystalline limestone, generally in small areas, was found in different parts of the district, but in no case was this rock seen to be cut by the corundum-bearing rocks. These areas of crystalline limestone may be considered as outliers over the Fundamental gneiss, and were no doubt at one time connected and formed areas of considerable extent, but have been disconnected by denudation.

Boulders of Silurian rocks were met with in the northeastern corner of Raglan, and in part of the corundum-bearing area of Lyndoch and Sebastopol. These likely came from outliers which are known to exist a few miles to the north. Two or three kilns were seen in which Silurian limestone boulders were made use of for the production of lime.

Modes of Occurrence

As original and secondary constituents of rocks.

Corundum has been found occurring under different conditions in crystalline rocks. In some cases it is an original constituent of the rocks, *i.e.*, it was formed at approximately the same time as the mass of the rocks in which it occurs. In other cases the mineral is of secondary origin, having crystallized out in the rocks at a later date than most of the material with which it is associated. Corundum occurs as an original constituent in different igneous rocks. In eastern Ontario it occurs, as has been stated, in syenite. In other countries it occurs in granite, basalt, andesite, trachyte and other igneous rocks.

The occurence of corundum in the Ilmen mountains referred to in a recent paper[4] by Dr Persifor Frazer, is particularly interesting in connection with the occurrence of the mineral in eastern Ontario. Dr. Frazer says: "The Ilmen mountains which lie close to the town of Miass are celebrated as the depository of many both intrinsically and scientifically valuable minerals, some of which are peculiar to the range. Thus, miaskite, (nephelinic or elæolitic syenite with biotite), named by Gustav Rose, is not peculiar to these mountains only, which bear the name of Ilmen, but also to their prolongations and the mountains Baiksky, Sobatchia, Potanina and Wichniowaia. In this continuation another characteristic rock is found composed of anorthite and corundum. In the gneiss of the Ilmens and their northerly prolongations veins of a rock composed essentially of corundum and orthose are found. M. Karpinsky considers this an analogue of the syenites, the corundum taking the place of biotite." In Ontario also facies of the corundum-bearing syenite consist essentially of corundum and acidic felspar, the former mineral sometimes predominating.

Corundum is found as a secondary constituent in various metamorphic rocks, having been produced in them through the agencies of alteration to which they have been subjected. In eastern Ontario and other parts of the world *e.g.*, Burma, etc., it is found in crystalline limestone. Some of the best gem varieties of the mineral have been found in this rock.

Rocks of all kinds carrying corundum are broken down through the action of the atmosphere and other agencies into gravel and sand, and hence the mineral is often found in loose deposits in the beds of streams and elsewhere. In these water deposits it is found associated with other minerals of high specific gravity, such as native gold and magnetite.

Some of the foreign localities where the mineral occurs in economic quantities are those of North Carolina and Georgia, (corundum), Chester, Mass , (emery), and Montana, (gem varieties). A great part of the emery of commerce comes from Turkey and the Grecian Archipelago. Gem varieties are obtained from Burma and other parts of the world.

Corundum in Burgess and Methuen.

Reference to the mineral in the Geology of Canada.

Up to the time of Mr. Ferrier's report of the occurrence of corundum in the township of Carlow, in October, 1896, the only known occurrences of the mineral in Canada are those referred to in the Geology of Canada, 1863. At page 499 it is stated that

[4] Geological Section from Moscow to Siberia and Return, Ac. Nat. Sci. Phila., Oct., 1897, p. 436.

"Corundum has been observed on the second lot of the ninth range of Burgess, and in the immediate vicinity of a deposit of copper pyrites. Here, in contact with the crystalline limestone, occurs a rock made up of felspar, quartz, calcite, silvery white mica and sphene. Disseminated through this aggregate were small grains of a mineral whose color varied from light rose-red to sapphire blue, while its hardness, which was greater than that of topaz, showed the mineral to be corundum. Small crystals of light-blue corundum have been found elsewhere in the limestone of the vicinity." Reference is also made in the same volume (p. 519), to the occasional occurrence of the mineral in the auriferous sands of the region on the south side of the St. Lawrence river, in Quebec. "Where, by the process of washing, the heavier portions of the auriferous gravel have been brought together, they are found to contain abundance of black ferruginous ores, consisting of magnetic iron, hematite, both specular and compact, chromic iron and ilmenite, with occasional grains of garnet, rutile and more rarely zircon and corundum."

Rediscovery of the Burgess deposit.

As no specimens of corundum from the North Burgess locality were in the possession of the Geological Survey, and as no person now living was known to have seen the mineral in place, or even a specimen of it, the writer decided to visit the locality and try to obtain specimens. Accordingly, in November last, after the completion of the field work in Hastings and Renfrew, a trip was made to North Burgess in company with a party of students in connection with the field classes of the Kingston School of Mining. The mineral was found to occur under the conditions described in the Geology of Canada. Lot 2 in the ninth concession of the township of North Burgess is now the farm of Mr. Rathwell. The specimens were found in white crystalline limestone near the edge of a field, alongside of the lane and 200 yards or so from the farm barns. A specimen of the mineral was also found in a piece of rock which had been thrown out from a shaft which was sunk years ago in search for copper. The shaft is situated in the lane, and lies between the place where the other specimens were obtained and the barns. The specimens obtained were all of small size, and were of a light rose-red color. A number of small openings have been made in the crystalline limestone in the immediate vicinity of the shaft to which reference has been made, the rock being used for burning into lime. The specimens were tested and were found to scratch topaz.[5] It may be stated that a few fine specimens of eozoon canadense were also obtained here.

Corundum in Methuen.

After the discovery of corundum in Carlow had been made public, the mineral was also reported to occur in the township of Methuen, Peterborough county, where it had been found some time before, but had not been identified. The writer visited this locality in October, and the mineral was found to occur in rocks similar to those in which it occurs in Hastings and Renfrew. A dark gneiss similar in appearance in hand specimens to the rock referred to in Hastings and Renfrew is cut by dikes and masses composed of syenite and nepheline syenite.

Qualities of Corundum

The quality of hardness.

The mineral corundum is one of the hardest natural substances known, being excelled in hardness only by the diamond. Its position in the scale of hardness arranged by Mohs, is between that of the topaz and diamond. Mohs made use of the numbers from 1 to 10 inclusive in his scale, and selected 10 characteristic minerals of different degrees of hardness in making up the scale, which is as follows: 1, talc 2, rock salt; 3, calcite; 4, fluorspar; 5, apatite; 6, orthoclase; 7, quartz; 8, topaz; 9, corundum; 10, diamond.

[5] As however the mineral spinel has a hardness equal to that of topaz, and occurs in limestone under conditions similar to corundum it would seem advisable that a careful examinaton, chemical and otherwise, be made of these specimens before their character is affirmed. As the specimens are of small size and are obtainable only near the surface of the ground it is somewhat difficult to determine them. One specinen obtained had a somewhat suspicious octahdral appearance. A specimen, which appeared to be somewhat impure, was found to contain 74.5 per cent. of alumina.

In determining the degree of hardness which a mineral possesses we try it to see if it will scratch or cut a mineral whose hardness is known, or we may determine whether a mineral of known hardness will scratch the specimen under examination.

As corundum is often more or less altered or changed into secondary minerals, mica, etc., care should be taken in selecting a specimen of this mineral for a test of its hardness to make use only of a specimen which shows no sign of alteration, and which appears to be free from impurities. As corundum is also somewhat brittle, care should be taken not to be deceived by the breaking of the mineral. A crystal of quartz with smooth surfaces is useful in distinguishing other hard minerals. As most minerals which have a hardness greater than that of quartz are comparatively rare, one has generally little difficulty by its use in determining whether a given specimen is corundum or not. A crystal of topaz is still more useful, and small crystals of this mineral can be obtained from mineral dealers at small cost. The prospector for corundum should also possess some typical specimens of the mineral for the purpose of comparing hardness and other characteristics.

Composition and Form.

Corundum is composed of the oxide of aluminium (Al_2O_3) but traces of the oxides of other metals are generally present as coloring materials. As in the cases of other minerals of non-metallic lustre, the color of corundum varies considerably. Sometimes the mineral is colorless or white, and at other times it is found possessing a blue, pink or red, brown, gray or other color.

Composition and color.

The relative weight of corundum compared with equal volumes of many other minerals is high. It has a specific gravity of about 4, i. e., it is four times as heavy as an equal volume of water, while felspar has a specific gravity of from 2.4 to 2.7 and quartz of 2.5 to 2.8. Its weight in hand specimens thus aids in its determination.

Specific gravity.

Corundum crystallizes in what is known to mineralogists as the rhombohedral division of the hexagonal system. Well developed crystals are often somewhat long and narrow, tapering towards a point at either end.[6] A cross section of a crystal is six sided. When the crystals are well developed they possess a number of planes at either end. Crystals of the mineral however from different localities differ considerably in form.[7]

Crystallization.

The crystals of this mineral generally possess a well defined parting, or show a tendency to split readily in certain directions. On some of these parting surfaces two sets of very fine lines are generally distinguishable, dividing the surface into small four sided areas.[8]

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[6] The first discovery of corundum in the Hastings district is said to have been made by a small child over 20 years ago. She and her father were sitting on the rocks resting after a walk through the woods, and the child picked up a crystal of the mineral which had weathered out of its matrix and asked her father if it did not have a shape like the glass stopper of a cruet stand bottle. Those who have seen these corks, and most people have, will have no difficulty in picturing to themselves the form commonly assumed by corundum. Although attention was directed to the mineral at this time, and also a few years later when it was mistaken for apatite, it was not identified till 1896.

[7] Mr. George F. Kunz in referring to the corundum (sapphire) crystals of Montana (Mineral Resources of the United States, 1896-7, p. 1201) says that "Their form and occurrence, moreover, agree with the important experiments and conclusions of Lagorio, viz, that corundums originating in an igneous rock form flat hexagonal tables with low rhombohedra." It cannot be said that the flat hexagonal tables are characteristic of the crystals from Hastings and Renfrew counties. The crystals from these counties, in the nepheline syenite especially, are often much elongated—sometimes having a length of 4 or 5 inches and a diameter of less than half an inch. The characteristic forms assumed by the mineral in these counties are shown in some of the reproductions from photographs which accompany this report. The forms assumed by corundum in igneous rocks would seem to depend on the acidity of the magmas from which they crystallized, and probably on other conditions as well.

[8] Prof. Nicol has given me the following note on the Hastings and Renfrew crystals:

"The crystals of corundum occur imbedded in the felspathic matrix. They are slightly altered to mica on the surface, and hence may often be readily separated from the felspar by carefully breaking away the latter with a small hammer.

Corundum is infusible before the blowpipe, but is slowly dissolved in borax and phosphor salt. It is not acted upon by acids. If finely pulverized the mineral takes on a blue color after heating with cobalt solution.

Other qualities.

Varieties of Corundum.

There are three subdivisions of the species, to which the name corundum is given, recognized in the arts. These are: (1) Sapphire, which embraces the purer kinds of fine colors, transparent or translucent, which are useful as gems. These gem stones are given different names according to the colors as sapphire (blue), and ruby (red). (2) Corundum, which includes the non-transparent kinds of dark or dull colors. (3) Emery, which is a granular corundum, black or grayish black in color, and more or less intimately mixed with magnetite or hæmatite. Some varieties of corundum are among the most costly and highly prized gem stones.

Subdivisions of Corundum.

Corundum has been produced artificially in various ways, different compounds of aluminium being used for the purpose. In most cases these compounds are subjected to the action of other substances at a high temperature. It has been formed by the decomposition of aluminium chloride through the action of magnesium and water vapour in a closed tube; by the decomposition of potash alum by means of charcoal, and in other ways. Many other minerals and even rocks have been produced artificially in the laboratory, but in most cases the results obtained have been of little economic importance. An interesting artificial production of corundum, considered in connection with the occurrence of the mineral in eastern Ontario, in nepheline syenite, is that in which the mineral has been produced by dissolving alumina in melted nepheline and allowing the molten mass to crystallize.

Artificial production of Corundum.

Uses of Corundum

In commerce corundum and its varieties are divided into two classes, viz.: gem stones and abrasive materials. The gem stone varieties have already been referred to. They are of comparatively rare occurrence, and when of high quality they are of great value.

Gem stones.

By the term "abrasive material" is understood a substance which is used for grinding or polishing purposes. Corundum proper and emery are used for this purpose.[9] The powdered substance is made

Abrasive material.

The material was secured by blasting from the face of a cliff and after the explosion the ground in the vicinity was strewn with crystals, separated from the matrix by the force of the concussion. The crystals are rough and often exhibit rounded or 'barrel-shaped' forms due to the presence of numerous pyramidal faces, but as the faces are neither smooth enough for measurement with the reflecting goniometer, nor large enough for measurement with the contact goniometer, it is difficult to determine them.

"Horizontal striæ are very prominently shown on the crystals. The basal plane, sometimes small, sometimes almost the full size of the prism, occurs very commonly. Parting parallel to this basal plane and also to the planes of the rhombohedron, is common. Striæ due to polysynthetic twinning are very clearly shown on the parting faces. These striæ are often shown on the basal parting plane also.

"The color and lustre of the crystals viewed on the basal plane are often very similar to those of hypersthene or bronzite. Some of the crystals show what Tschermak calls "isomorphous layering," fig. 1, (taken from Tschermak's Mineralogie). On one crystal the peculiar appearance shown in fig. 2 was presented. On the basal plane of a fairly well defined prismatic crystal rests a triangular plate. This is evidently a section of a rhombohedron, parallel to the basal plane, properly oriented on the basal plane of the prism."

[9] Other materials used as abrasives are carborundum, crushed steel, diatomaceous earth, garnet, grindstones, millstones, pumice, quartz crystal, tripoli and whetstones. The production of the artificial substance carborundum, which is the chief competitor of corundum and emery, increased from 595 short tons ($365,612) in 1896 to 621 short tons ($153,812) in 1897. The decrease in value was due to a heavy reduction in price by the sole concern, the Niagara Falls Co., producing this substance. "The Engineering and Mining Journal" of New York from which these figures are taken further states that the production of corundum, in the United States, declined from 250 short tons ($35,000) in 1896 to 230 short tons ($32,200) in 1897. Emery is said to have declined from 1,550 short tons ($108,500) to 1,500 ($105,000) during the same period.

into "emery" wheels, the grains being cemented together by some suitable substance. The use of emery wheels in grinding down steel or other instruments is well known. Some of these wheels are moistened with water when being used, but others have to be used in the dry state, their cement not holding together after being wet. Emery is also used in the form of grains and powder.

Corundum has been used in the production of aluminium, but as it is in such demand as an abrasive material it is too costly to be used as an ore of this metal.[10] If its price were lower there would no doubt be a demand for it as an ore, on account of its generally being pretty pure and possessing such a high percentage of the metal.[11]

Ore of Aluminium.

The uses of aluminium are being constantly extended. Many interesting results have been obtained with it in connection with alloys, one of which is of particular interest in Ontario. It is stated that of the alloys so far examined the one which seems to give the best present results and the greatest promise is that with nickel. The addition of a few per cent. only of nickel to aluminium greatly enhances the strength and toughness of the metal, and adds to its brilliancy without adding materially to its weight.

Uses and metallurgy of aluminium.

The metallurgy of aluminium offers a very inviting field for research. Alumina in a suitable form for the extraction of the metal is said to sell at about 4½ cents per pound, or two tons of alumina, which represent about one ton of the metal, are worth about $180. As aluminium sells at $700 per ton there would seem to be a considerable chance for the discovery of methods of extraction whereby the metal could be produced more cheaply. Moreover it does not seem altogether unlikely that methods of extraction will be discovered whereby a less pure alumina than that demanded by manufacturers at present can be used for the production of the metal.

[10] The Mineral Industry, vol. i, p. 11 and 163.

[11] The production of the metal aluminium in the United States in 1897 was 4,000,000 lb. ($1,400,000) against 1,300,000 lb. ($520,000) in the previous year. The increase was due partly to reduction in price for the metal and partly to the development of a greatly increased export trade. The United States and Europe together produced 5,516,000 lb. in 1896. In 1891 the United States produced only 150,000 lb. of the metal.

The year 1897 was distinguished by the beginning of an export trade in the United States of the mineral bauxite, which is the ore of aluminium used at present. In this year 2,537 tons of the mineral were shipped abroad.

Corundum contains theoretically 53.2 per cent. of aluminium and is usually pretty pure. Bauxite contains theoretically 40 per cent. of the metal but there is frequently from 30 to 50 per cent. impurities present.

History and Statistics of Corundum.

Different varieties of corundum were known to the ancients, who made use of it as a gem and as an abrasive material. The emery of the Grecian islands has long been known. It is thought by some that the native races of America, judging from certain carvings on rocks, have made use of the mineral.

Early uses of the mineral.

In the Geology of Canada, 1863, reference is made as has been already stated, to the occurrence of the mineral in the township of North Burgess, and to its occurrence with other minerals in the auriferous sands of the Chaudiere. No other occurrence of the mineral in Canada was made public until the report of its occurrence in the township of Carlow in October, 1896. This may be accounted for by the fact that most people are attracted only by minerals of a metallic lustre, and so pass over those of a "stony" nature. If a part of the energy expended by prospectors in this Province in search for the precious metal had been employed in hunting for other substances, it seems not unlikely that many more valuable and interesting minerals would have been found.

Lack of interest in prospecting for it.

It is difficult to get reliable statistics on the production and consumption of corundum. In the Mineral Resources of the United States, 1895 and 1896, a Government publication, it is stated that "The producers of both emery and corundum are averse to giving publicity to their business, and in order to maintain the confidential nature of the statistics the production of the two minerals is stated together." Manufacturers of emery wheels

Statistics of production and consumption.

in Canada claim there is a "combine" among the producers of the raw material to keep up the price, and they seem desirous that other deposits be opened up so that the price of the material which they make use of in their manufactures will be lowered.

The present selling price of North Carolina corundum quoted in the Engineering and Mining Journal of New York is from $140 to $200 a ton, being at the rate of 7 to 10 cents per pound. Emery is quoted at 1½ to 5½ cents per pound.

The corundum and emery produced in the United States in 1895 is stated to have been 2,102 short tons, valued at $106,256, and in 1896 the production was 2,120 short tons valued at $113,246. "The corundum used in the United States is exclusively of domestic production. Emery is imported from Turkey and the island of Naxos, one of the Cyclades group in the Grecian archipelago."[12]

The imports of emery in 1895 were valued at $133,038, and in 1896 they had a value of $148,231. The imports of emery into Canada for the last ten years have averaged about $15,000 annually.

Location of Ontario Deposits

The corundum of the township of North Burgess, while interesting from the mineralogical point of view, is, as far examined, of no commercial importance. It occurs on lots 2 in the ninth concession, about three miles from the town of Perth and a few miles north of the Rideau canal.[13]

North Burgess in Lanark county.

The mineral in the township of Methuen, Peterborough county, occurs at the Bennett and Miller mines, where the syenite dikes containing it have been worked for mica, one of the important constituents of the rock. These deposits are situated on either side of a small lake near a hill which is known in the vicinity as the "mountain." These occurrences of the mineral are in the ninth and tenth concessions of the township. The locality can be reached in summer by taking the Grand Trunk or Canadian Pacific railway to the town of Peterborough, thence by railroad to Lakefield on Stony lake, from which a boat can be taken to within four or five miles of the deposits. From the landing place there is a road to the properties referred to. Or the C. P. R. may be taken to Havelock or Norwood station, and the corundum locality may be reached by a drive of about 20 miles across country northward. A stage runs from the last mentioned railroad station to within a short distance of Stony lake.

Methuen in Peterborough county.

The corundum deposits of the northern part of the county of Hastings and the southern part of the adjoining county of Renfrew are of easy access. A train on the Ottawa, Arnprior and Parry Sound railroad may be taken to Barry's Bay station, from which place a small steam boat runs in summer to the village of Combermere on the Madawaska river. This village is situated within three or four miles of part of the belt or band of rocks in which corundum has been found. The location of these villages is shown on the map. The localities in which the mineral has been found in Hastings and Renfrew may be reached also from the south either via the Irondale, Bancroft and Ottawa railroad to the vicinity of the village of Bird's Creek, from which

In Hastings and Renfrew counties.

[12] Min. Res., U. S., 1896, p. 12.

[13] It may be explained for the benefit of the foreign reader that the older settled parts of the Dominion of Canada are divided into a number of Provinces or primary divisions. The Province of Ontario, the most populous of these, is again subdivided in the older settled parts into counties. These counties are subdivided into townships and these again into concessions, or, as they are sometimes called, ranges. Concessions consist of narrow strips of country running from one side of a township to the other, separated by public road allowances or highways, and to each concession a particular number is given. These are subdivided into lots, which are given consecutive numbers from one end of a concession to another. The counties of Ontario vary considerably in size, as do also the townships. The lots referred to in this report and shown on the accompanying map consist of about 100 acres each, but in some parts of the Province they are of larger size. Such expressions as "lot 10, concession XVI. of the township of Raglan" will be understood after reference has been made to the map. The writer has been asked once or twice to explain the meaning of local geographical terms met with in scientific papers and reports on Canada and has decided that it might be well to do so here.

place a stage runs twice a week to New Carlow post office in the township of Carlow, or via the Central Ontario railroad to Ormsby station and thence by a drive across country. Horses and rigs are to be had for hire in any of the villages mentioned. A number of interesting mineral deposits are situated within easy access of stations on the railroads just mentioned, which could be visited by any one having a little time at his disposal during a trip into the corundum district. To one interested in minerals and geology generally the district offers great attractions. Coming in from the north the train could be left at Eganville station if desired and some of the famous mineral localities of the township of Sebastopol, noted for its twin zircons and other specimens, could be visited. The eastern end of the band of corundum-bearing rocks, so far as traced out, lies in the southern part of this township, the writer having found the mineral in place here during the past summer.[14]

Water Power, Labor and Supplies.

As will be seen by the larger map, the York Branch joins the Madawaska river in the northern part of the township of Raglan, in the vicinity of some of the corundum deposits. Near the point of junction of these is what is known as Palmer's rapids, which is capable of supplying an immense amount of water power. At points on the York Branch, marked as rapids on the map, there are also good water powers; there is also a water power at New Carlow post office on Papineau creek in the township of Carlow. This power is now made use of in running a grist mill and saw mill. In this, as in most parts of the Laurentian country, water powers are numerous. Even if not situated within easy access of a mineral property, they could be made use of in generating electricity for transmission to long distances.

Water powers on the Madawaska and its tributaries.

Most of the men living in the district are well fitted for mining work, having been employed in lumbering operations and in railway construction. There is thus no lack of experienced teamsters, and of men used to blasting operations and to the construction of rough wooden and stone structures. Although the district is not thickly settled, still it can furnish sufficient agricultural produce for the support of a mining population of considerable size. Moreover, freight charges on any supplies that would be required to be imported into the district would be low on account of the railway connection. Sufficient timber for mining purposes can be obtained near at hand, and there is an unlimited supply of wood for fuel.

Labor, supplies and timber.

Extent and Method of Exploration.

At the time of my first visit to the district in the early part of July corundum had been reported to occur only in the townships of Carlow and Raglan. Mr. N. T. Armstrong showed me over the lots on which the mineral had been found in Carlow. These were lot 14 in the fourteenth concession and lots 15 and 16 in the sixteenth concession. Early in August, on my return to the district Mr. Henry Robillard showed me over the lots in Raglan on which the mineral had been found. These were lots 1, 2, 3 and 4 in the nineteenth concession and lots 3 and 4 in the eighteenth. No other occurrence of the mineral in the Province had been made public except the one in the township of North Burgess, described in the Geology of Canada, and that in the township of Methuen, 40 miles distant to the southwest of Carlow. The occurrences in these two townships have already been referred to in this report. All other deposits to which reference is here made, which occur in a band of rocks stretching across country for 30 miles in parts of seven different townships, were discovered by the writer and his assistants between the first week in August and the first week in October.

Exploration of the territory.

On beginning systematic work on the corundum deposits in the early part of the month of August a few days were first spent in a a study of the known deposits and their

[14] The location of the railroads and places to which reference has been made is shown on the small index map at the head of this paper. The distance of some of the railroad stations, in the corundum district, from some of the chief cities of Ontario is also shown on the map.

associated rocks. As the district is a very hilly one, and as the rocks are covered to a considerable extent by brush and soil, it was at first feared that considerable difficulty would be experienced in making out the relations of the rocks, and therefore that the discovery of new deposits of the mineral would depend largely on chance. However, after examining the known deposits in the townships of Carlow and Raglan, it was found that the mineral occurred under the same conditions in both, and after determining the strike of the rocks in both localities it was concluded that the deposits all belonged to one band of rocks.

Studying the known deposits and associated rocks.

It was first decided to examine the rocks lying between the two localities in which corundum had been found. On making this examination outcrops of rock carrying the mineral were found at numerous points between lot 14 in the fourteenth concession of Carlow and the lots in Raglan which have been referred to. The deposit of corundum on this lot in Carlow lies at the lower part of a face of one of the highest hills in the district. The hill forms part of a range of high hills which run from this lot in a northeast direction through Carlow into Raglan, and is continued across the York Branch river in this township. In Carlow the hill spreads out towards the south to the north of the twelfth concession, about one mile north of Foster's lake. These high hills are situated in the thirteenth, fourteenth, fifteenth and sixteenth concessions of Carlow and have a trend northeast from lot 14 in the fourteenth concession, facing in a general way northwest and southeast. The position of the hills can be made out in a general way from the roads on the map. The winter road running from the main road near lot 14 in the fourteenth concession and thence across Grady lake, lots 15 and 16 in the fifteenth concession, to the junction of the main road near the point where the corners of the townships of Carlow, Bangor and Raglan join, follows a valley lying at the base of the hills. Similarly the main road running from the point where it is joined by the winter road in the thirteenth concession of Carlow to near the point where it is again joined by this road near the northeast corner of Carlow follows the low land lying at the foot of the hills to the southeast, although in some places the road runs at some distance from the hills. The Raglan deposits referred to are situated on the southern or southeastern face of a high hill, the low land at its base stretching out to the marsh or drowned lands along the York Branch. It is difficult to give a detailed description of the topography of the district, high hills being very numerous and being generally not connected into ranges. It may be said however that the highest hills in the strip of country through which corundum has been found form a range whose direction is in a general way parallel with that of the town line or boundary between the townships of Raglan and Radcliffe. This fact was at first of some assistance to us in prospecting, as after we had succeeded in finding corundum at points along the hills between the previously known deposits of Carlow and Raglan we decided that the hills of similar height in line with these between the York Branch and Madawaska rivers were likely to be of the same nature, the strike of the rocks moreover being in the same general direction as the line of hills.

Deposits in Carlow and Raglan.

Topography of the country.

The strike of the rocks near the northeast corner of Raglan changes somewhat, and the height of the hills also becomes less from here to near the south end of lake Clear in Sebastopol, where the hills again become high. The term high is here used only in a comparative sense, the hills in this district being much higher than those commonly met with in eastern Ontario, but not nearly of so great an altitude as those of some other parts of the Province.

Extending the Field of Discovery.

Having succeeded in connecting the previously known deposits in Carlow with those in Raglan by means of others lying between them, and thus having traced the corundum-bearing band to near the western edge of the York Branch, which here occupies a wide channel between the hills, it was decided to search for the mineral on the lots lying between this river and the Madawaska. This search was soon rewarded with success, the

Tracing the corundum belt to Madawaska river.

mineral being found on lot 9 in the seventeenth concession, not far from Gottlieb Lenz's farm buildings. Shortly after this the mineral was found on lot 19 in the eighteenth concession. This lot occupies a part of the highest hill near the junction of the two rivers. Subsequently the mineral was found on lot 13 in the seventeenth concession, and in small quantities on two or three other lots.

The surface of the ground is pretty well covered with soil, small timber and brush on most of these lots. Hence there is generally difficulty in determining the extent of the deposits. The hills are rather flat on top and most of the settlers' clearings are situated on them.

From the deposit situated on the hill on lot 19 in the eighteenth concession the village of Combermere can be seen up the Madawaska river. The mineral occurs in the rock near the summit of the hill and on its northeast slope. The corundum rock is cut by dikes of pegmatite carrying pink felspar, hornblende and quartz. Corundum shows in the rocks at places along the face of the hill for 30 yards or so, with a width exposed in places of 10 yards. The rock shows to some extent a schistose structure. The corundum rock is seen to have weathered more rapidly than the dikes which cut it, leaving them standing above its surface. Small patches of the corundum-bearing rock carry over 30 per cent. of the mineral.

On lot 13 in the seventeenth concession in the vicinity of the corundum over 90 per cent. of the surface is covered with soil, making it difficult to estimate the amount of corundum present. A number of outcrops of the rock carrying corundum were however seen, the mineral occurring in both pink and white felspar rock, On this lot as well as on lot 19 in the eighteenth concession it seems likely that considerable of the mineral would be brought to view if a little work were done removing the surface covering of soil.

Mineral in drift-covered rocks.

East of the Madawaska.

At the time of my departure for Toronto on August 17 to attend the meeting of the British Association for the Advancement of Science, I gave instructions to my assistants to search for the mineral immediately to the northeast of the Madawaska river, as the corundum-bearing rocks had now been proved to extend from the township of Carlow into Raglan and had been found across the wide valley of the York Branch. While in Toronto I was notified by my assistants that they had succeeded in their search for the mineral on the opposite side of the Madawaska to that on which we had been working. They discovered the mineral on lots 24, 25, 26, 27 and 28 on or near the line between the eighteenth and nineteenth concessions of Raglan, and later in the season we found it on lot 35 in the eighteenth concession of this township. On lots 24 to 28 there is considerable rock carrying the mineral.

Continuation of the belt eastward.

Near the line between lots 24 and 25, and near the boundary between the eighteenth and nineteenth concessions, the corundum-bearing rock has a distinctly laminated or schistose structure. At this particular point corundum was found in the rock for a distance of 100 yards diagonally across the strike and over a width of about 50 yards. The mineral is however more abundant in some parts of the rock than in others. This outcrop of the rock is a few hundred yards from a small rapid on the Madawaska river which lies a short distance below the foot of Palmer's rapids. A trap dike which has a width of about 12 feet is in close proximity to the corundum rock. Some of the corundum on lot 26 of the nineteenth concession is very coarse grained.

Radcliffe and Brudenell.

The strike of the rocks, as has been already stated, changes, bending more towards the northwest along the boundary between Radcliffe and Brudenell. In the latter township, which joins the northeast corner of Raglan, corundum was found on lot 34 in the fifth concession, lot 34 in the seventh concession and lot 24 in the sixth. The mineral was also found on lot 31 in the second concession of the adjoining township of Radcliffe. It will be seen from the map that these lots lie north of the line along which the mineral occurs in Raglan and Carlow, the situation of

Change in the strike of rock towards Radcliffe and Brudenell.

the deposits agreeing with the change in direction of the strike. The strike on lot 34 in the seventh concession is northwest. The place on this lot where the outcrop of the corundum-bearing rocks occurs is near the side of the German road and about 1½ miles from the village of Rockingham. The deposit is near the house of R. Adams. The rock possesses a foliated structure, and corundum is scattered through it for a distance of over 250 yards along the road. A considerable part of the rock is nepheline syenite, and in places the mineral occurs in considerable quantity. There is at times a noticeable percentage of magnetite associated with the corundum, some specimens of the two associated having a rather striking appearance, nearly white corundum being surrounded by the black magnetite. This mixture of the two minerals may be said to form a coarse grained emery.

On lot 34 in the fifth concession the outcrop of the corundum-bearing rock is situated near the top of a hill in a cleared field close to the farm house of Mrs. Frederick Block. In this deposit the mineral for the most part is coarse in grain and part of the rock holds a high percentage of it. The richest part of the rock has a width of about 8½ feet and a length of 26 feet, but the exposure is covered by soil on its sides and ends, under which it strikes. The part of the rock richest in corundum, judging from hand specimens, contains no nepheline, but nepheline syenite outcrops between the deposit just referred to and the house. From the point where the rock is richest in corundum to the house is a distance of about 125 yards. The nepheline syenite carries sodalite and the usual accessory minerals, as well as corundum.

Crystalline character of corundum in nepheline syenite.

It may be stated that the corundum which occurs in nepheline syenite on this lot and at other places in the district often possesses a pretty perfect crystal outline, differing in this way from the mineral which occurs in rock in which nepheline is absent. In the latter case the mineral usually possesses a very imperfect crystal outline. The crystals in the nepheline syenite are usually long and narrow, and taper towards a point at either end. The terminations are however often imperfect. It was here that one of the attempts, which have already been referred to, was made to burn the nepheline syenite into lime, this rock being mistaken for crystalline limestone. The kiln in which the rock was partially fused stands at the side of the lane near the road, and offers a good opportunity to those desiring unique specimens. About 2½ tons of the corundum-bearing rock from this lot were blasted out and shipped to the laboratory of the Kingston School of Mining for a mill test.

A considerable part of this lot is cleared and fenced into fields, so that one would not expect the exposures of rock to be very numerous. To the northeast of the house however, and near the woods, there is a considerable exposure of nepheline syenite. This is several hundred yards north of the outcrops which have just been referred to. Numbers of large angular blocks of rock, some of which are rich in corundum, lie to the north of the house and farm buildings and to the north of the outcrops near the roadside, from which they could not have been removed by glaciers. On removing the covering of soil doubtless considerable corundum-bearing rock would be exposed. On this lot also good specimens of nearly white corundum can be obtained, the ordinary color of the mineral on the other lots in the townships referred to being brown or gray.

Numerous boulders, some of which are of large size, lie along the hillside on and at the edge of the road. Boulders holding the mineral are also quite numerous in a valley-like depression which stretches south from the outcrop, whence they have doubtless been transported by glacial action. It was through these transported boulders that the deposit was first found. They were seen at the roadside about a mile south of the deposit, and were followed north until the rock was reached in place. Other deposits were found in the same way during the summer, in most cases search meeting with success after following the boulders up for less than a mile.

Corundum boulders.

On lot 31 in the second concession of Radcliffe corundum occurs in a pink colored rock, which is somewhat laminated in structure, on the face of a cliff at the edge of the woods.

The cliff can be seen from Mr. Schröder's house. The width of the band of rocks here which carries the mineral is 12 or 15 feet, and it is exposed for some distance along the edge of the cliff. Had it not been for a recent fire, which removed the brush and part of the soil, the exposure might have escaped notice,—a fact which illustrates that work will have to be done in removing the surface covering at many of the deposits referred to in this report before an opinion can be formed concerning their extent.

Lyndoch and Sebastopol.

Corundum bearing rock in Lyndoch and Sebastopol

Corundum-bearing rock was found in place on lot 13 in the fourteenth concession of Lyndoch, and on lots 6 and 24 in the fourth concession of Sebastopol. It was also found on lot 25 in the fifth concession of Sebastopol, and on two or three adjoining lots whose exact numbers could not be easily determined. Coarse nepheline syenite is exposed at the side of the road on lot 11 in the fourteenth concession of Lyndoch. This exposure of rock has a considerable breadth. At this point the rock does not carry corundum, but it was decided to trace up the dike or mass, as by former experience it had been found that nepheline syenite passed into syenite in which nepheline was absent. After following the strike of the rock towards the west for some distance it was found to contain less nepheline, until finally this mineral was not observable on weathered surfaces of the rock. At this point the rock was found to possess considerable magnetite in fairly well formed octahedral crystals, some of which were about half an inch in length, and a short distance further on the rock was seen to be corundum-bearing. This portion of the rock occurs on the north end of lot 13 in the fourteenth concession, at the east end of a small lake. There is here an exposure of rock of considerable extent in which corundum occurs. Time did not permit of an examination of lots immediately to the west, but it is likely the mineral occurs on some of them as well.

The nepheline rock was also traced eastward from the road and was found to die out on lot 6 in the fourteenth concession, but here the surface is pretty well covered with soil and part of the lot is occupied by a small lake, and no corundum was found.

On lot 6 in the fourth concession of Sebastopol corundum occurs sparingly in the rock at the top of a cliff across the road from some farm buildings. Crystalline limestone, trap rock and coarse quartziferous pegmatite form part of the cliff. It may be stated that the rock at places between this lot, and lot 13 in the fourteenth concession of Lyndoch has the same general appearance as the rock in which corundum is found. None of the mineral was observed here, although it is likely that if we had had more time at our disposal we would have discovered deposits of the mineral.

Lot 24 in the fifth concession of Sebastopol is rather difficult of access, being situated at some distance from a road and in a rough piece of country, as indeed are many of the lots referred to in this report. Boulders of rock holding corundum were found about a mile to the south of this lot, and they were followed north until the mineral was found in place in the face of a high hill. There is an exposure of rock containing corundum here of considerable extent and the mineral is present in fair quantity.

Lot 25 in the fifth concession is situated on a hill which is one of the highest and most difficult of access in the whole district. This hill lies a short distance south of lake Clear. There is a considerable development of corundum-bearing rocks on this and adjoining lots, but as the examination of this part of the district was made at the end of the season there was not time to make a thorough examination of the lots. Several exposures of the interesting rock nepheline syenite were observed. On account of the rough character of the locality it was not possible in the time at our disposal to determine the number of some of the lots definitely, traces of surveyor's lines here as in other parts of the district having been destroyed by fire during the years which have elapsed since the surveys were made.

The finding of corundum in the township of Sebastopol adds another mineral to the interesting list of those previously known to occur there. Some specimens of minerals

from this township are to be found in collections in different parts of the world. This is owing largely to the enthusiasm which the well known collector Mr. Alexander Parks has shown in the work of collecting. Twin crystals of zircon and large sphenes are probably the best known minerals from this locality.

A famous locality for rare minerals.

Numerous travelled boulders of nepheline syenite were observed in the townships of Lyndoch and Sebastopol to the south and southwest of lake Clear. It was at first thought that these boulders probably came from a mass of rock situated in Sebastopol, but on tracing them up they were found immediately to the north and northwest of lake Clear and beyond, though we did not succeed in locating the mass of rock from which they came. The position of the lots on which corundum was found in these two townships is south of where the boulders were situated. The breadth of the strip of country over which these boulders of nepheline syenite are pretty thickly scattered is over three miles. In most parts of the district where boulders were found the parent mass was located a mile or two to the north, in the direction of the glaciation, and it is likely that the mass from which these numerous nepheline syenite boulders were detached will be found on carefully following up the track of the glacier in some of the townships immediately to the north or northwest of lake Clear. Judging from the number of boulders and the width of the strip of country over which they are scattered, the mass of rock from which they were detached must be of considerable size. It would be well to search for it both for the scientific interest it is likely to have and on account of the probable occurrence of corundum in it or in its associated rocks.

A region of nepheline boulders.

In Carlow Township Again.

After having traced the band of rocks in which the corundum occurs eastward to the south of lake Clear in Sebastopol, from what may be called the original lot or locality in Carlow (lot 14 in the fourteenth concession), on which Mr. Ferrier reported the mineral to occur, it was thought advisable to determine whether the mineral was to be found in the western part of this township. We were successful in tracing these rocks westward to near boundary of Carlow and Monteagle, which the is near the valley of Papineau creek. This valley is somewhat wide and the rocks on either side are pretty well obscured by loose sedimentary deposits which hinder the search for the mineral. Several rocky hills which are situated not far east of the creek were found to be of an acidic character, thus giving no indication of carrying corundum. It seems not unlikely however that corundum does occur to the west of the creek, in the northern part of Monteagle and the adjacent part of Wicklow, although we did not find it in the little time we were able to give to the work in either of these two townships. The mineral was however found in Carlow west of lot 14 in the fourteenth concession, on lots 10 and 11 in that concession, and lots 8 and 10 in the fifteenth. Difficulty was found in determining on what lots these four occurrences are situated, as the township was surveyed years ago and little traces of the lines remain, as the district has been subjected to heavy forest fires. For this reason the situation given of one or two of these occurrences is only approximate. Lot 8 in the fifteenth concession is occupied by Mr. Jessup, and the mineral is found on the north end of the lot. There is also an occurrence on the end of a ridge which runs east from the southern part of lot 8 in the fifteenth concession. Comparatively low land lies between this end of the ridge where the outcrop occurs and the outcrop on lot 14 in the fourteenth concession. The end of the ridge was thought to be on lot 10 in the fourteenth concession. A little to the east of this is another outcrop on a knoll which was thought to be on lot 11 in the thirteenth or fourteenth concession. The outcrop on what was thought to be lot 10 in the fifteenth concession is on the side of a rocky hill which is light in color and can be seen for some distance. The mineral is also found in place on lots 15 and 16 in the sixteenth concession. On the latter lot some of the rock exposed holds a high percentage of corundum.

Exploring the western part of Carlow township.

Lot 14 in the fourteenth concession, which may be called the original corundum deposit

of the district, has already been referred to several times in this report. The outcrop first discovered[15] is situated near the side of a lumber road and is distant about 75 yards from a creek. This outcrop occurs on the face of a cliff at the lower part of a sloping face of one of the highest hills in the district. The corundum-bearing rock is in part coarse grained and pink in color; in part fine grained and gray in color. No nepheline was observed in hand specimens of the rock, and quartz is also absent. The corundum-bearing rock cuts brown gneiss and can be traced somewhat diagonally across the strike along the face of the cliff for about 100 yards, and shows along the strike up over the cliff for about twice this distance. Dikes of quartziferous pegmatite cut the gneiss on either side of the corundum-bearing rock. This deposit being thus situated on the face of a cliff gives a better opportunity of judging of the size than do those deposits which occur on lower ground where the surface is often covered with soil. The percentage of corundum carried by this rock has not been stated, as the writer thought it better to wait for the result of a mill test on some tons than to attempt a rough estimate which might be misleading.[16] In making an estimate of the mineral in a specimen of the rock two factors have to be taken into consideration, viz., volume and specific gravity, the corundum having a considerably higher specific gravity than the felspar with which it is associated. Moreover the mineral is more or less segregated into patches and stringers, and the only test which would seem to be of much commercial importance is the treatment of some tons of the rock. For this reason about 3½ tons of the rock were taken out and treated in the mill of the Kingston School of Mining, an account of which is given by Prof. DeKalb.

Observations on the original discovery.

Outcrops of the mineral were observed on the summit of the hill some distance east of this one, and also on the side of the hill facing Foster lake and about one mile north of the lake.

Other outcrops in Carlow.

In Raglan and Bangor.

Outcrops of rock carrying corundum, some of which were of considerable size, were also discovered on a number of the lots lying between lot 14 in the fourteenth concession and the northwest corner of the township of Raglan. The hills are for the most part covered with brush and soil, and it is generally only on the steeper part of their sides that the outcrops can be detected. Our work showed however that most of the lots lying between the two points referred to contain the mineral in place.

Six or eight lots in the northwest corner of Raglan exhibit outcrops of corundum. These lots are numbered from one to five in the eighteenth and nineteenth concessions respectively. The line between these concessions here runs along the steep face of a high hill. The more important outcrops are on lots 1, 2, 3 and 4 in the nineteenth and on 3 and 4 in the eighteenth, and on the concession line. The rock containing the highest percentage of the mineral lies on the concession line and on either side of this line, i. e., on the south parts of the lots referred to in the nineteenth concession and on the north parts of the lots in the eighteenth. Lot 4 in the eighteenth concession probably contains more of the corundum-bearing rock than any of the other lots. On part of the road allowance, where however no road is likely to be constructed on account of the character of the hillside, the rock is rich in the mineral. As would naturally be expected, all degrees in size of grain or crystal of corundum are seen on these lots. One of the largest specimens of the mineral

Deposits in Raglan

[15] Summary Report Geological Survey of Canada, 1896, and Sixth Report of the Bureau of Mines, Ontario.

[16] As it is with the statistics of the corundum industry, which have already been referred to, so it is with information on certain points on corundum deposits. It is difficult to get much information from government reports on the percentage of mineral carried in the rock of foreign deposits. The only reference which the writer remembers meeting with concerning this point is contained in the Mineral Resources of the United States, 1893. In speaking of the Socrates mine of North Carolina it is stated that the vein is two to six feet wide and the vein material averages 15 per cent. corundum by a mill run. It is further stated that at the Bad creek mine in the same district the vein is from four to 15 feet wide and that the vein averages probably 10 to 15 per cent. corundum.

which have been obtained weighed about 24 pounds. On lot 1 corundum occurs in nepheline syenite, this rock being a facies of the rock which ordinarily carries the mineral in the district. On a steep face of the rock crystals of the corundum were observed arranged in the rock with their longest axes in a vertical position, appearing as if the individuals after having been formed had thus arranged themselves in the molten mass, from which they crystallized before it had soldified.

The face of the hill referred to has a southern exposure, and in the valley or low land below is a stream on which is situated a small sawmill. These lots are not far off the road, and are situated about four miles from the village of Combermere.

The mineral was also found in place on lot 25 in the first concession of Bangor.

Only brief descriptions have been given of the occurrences of corundum on the lots to which reference has been made. On most of them rock can be obtained carrying as high a percentage of the mineral as that which has been treated at the mill. It has been shown that the mineral occurrs pretty widely distributed in the district, so that if other conditions are favorable for the development of the deposits there are many to choose from.

Conditions of Occurrence.

The conditions of occurrence are much the same throughout the band of rocks, practically the only variation in the occurrence of the mineral being the existence of outcrops of nepheline syenite here and there at points in the band. None of this rock was found in place in Carlow, judging from hand specimens, although a careful examination of thin sections of the gray varieties of the rock by means of the microscope might show the mineral nepheline to be present in subordinate amounts. Starting from the western end of the band, nepheline syenite is first found on lot 1 in the nineteenth concession of Raglan ; east of this there are outcrops of the rock on lots 34 in the fifth and 34 in the seventh concession of Brudenell, over eight miles distant from the Raglan outcrop. Seven or eight miles southeast of the Brudenell outcrop the rock is found in place in the fourteenth concession of Lyndoch, and 9 or 10 miles east of this it is in place in the fourth and fifth concessions of Sebastopol.

Outcrops of corundum in nepheline syenite.

Origin of the Corundum.

In some parts of the world where corundum is found as a constituent of igneous rocks it is claimed that the molten material from which the rocks originated dissolved parts of other rocks in its passage through them, and these rocks being highly aluminous caused the molten material to contain an excess of alumina, which crystallized out as corundum on the cooling of the material. Hence it might at first appear that the nepheline syenite and what has been called in this report ordinary syenite (hornblende or mica syenite) belonged to different periods of eruption, the excess of alumina found in each being accounted for by the fact that the two kinds of igneous rocks cut through the same strata in their passage towards the surface. However, as has been previously stated, the one kind of rock is seen to run into the other along the strike of sometimes quite narrow dikes, the nepheline being occasionally segated into patches in the felspar.

It does not seem more necessary to attempt to explain the occurrence of corundum in syenite through the solution of pieces of highly aluminous rock than it does to so explain the presence of free silica in granite through the absorption of highly silicious rocks.

In seeking for an explanation of the presence of the excess of alumina (corundum) in the syenites, we may refer to three possible origins of the rock. The rock matter may be re-fused sedimentary material, or it may represent a part of an original magma high in alumina, or again the excess of alumina now in the syenites may be due to the absorption of portions of basic rocks by the molten material which crystallized into the syenites on the passage of this material upward towards the surface.

Three possible theories of origin.

The outcrops of syenite in the townships of Dungannon, Faraday and Glamorgan, which have been examined and described by Dr.

Adams and Mr. Barlow, have not been found to contain corundum. The writer has not examined these outcrops carefully, and the gentlemen referred to do not state what rocks these syenites cut through. It is stated in speaking of one outcrop of nepheline syenite that "The mass occurs in the Laurentian and is flanked on the south along a considerable part of its course by crystalline limestone. It is in many places intimately associated with a fine grained reddish biotite granite resembling aplite in appearance and which is apparently intrusive."[17]

The dark gneiss which the corundum-bearing rock cuts through at the deposits examined in Methuen and at many of those in Hastings and Renfrew, over 40 miles to the northeast, has a pretty uniform character throughout the district. Specimens of this rock from Carlow and other townships were found to range in silica from 47 to 53 per cent.

The following statement of analyses shows the percentage of silica and alumina in three specimens :

	SiO_2	Al_2O_3	Fe_2O_3
I.	48.78	20.77	3.97
II.	48.14	20.54	3.76
III.	50.34	18.75	

Nos. I and II are analyses of specimens taken from a lot in Brudenell, and were made by Mr. J. Walter Wells. No. III is an analysis of the gneiss through which the syenite cuts at the Miller mine in Methuen, for which I am indebted to Prof. Nicol.

It would appear that the percentage of alumina, both free and combined, in the whole body of syenite dikes and masses of the district does not exceed that commonly found in masses of nepheline syenite, which, judging from ten analyses of specimens of this rock from different parts of the world, averages about 22 per cent. The alumina in other syenites—mica, hornblende and augite—taken together averages probably 16 or 17 per cent.

Thus there is a difference between the alumina contents of nepheline syenite and other syenites of, on the average, something like 5 per cent. Since corundum is absent in parts of some of the dikes and masses, and is absent or very sparingly present in the whole of other dikes or masses, it may be safe to assume that the percentage of free alumina (corundum) in all of the syenite of all kinds in the district is less than 5. In considering the origin of the corundum the question then arises—did that part of the magma from which the syenites with their contained corundum originated possess a chemical composition similar to that of nepheline syenite, and would this magma under the proper conditions have crystallized into a mass composed largely of nepheline syenite with no free alumina, or was the part of the alumina now existing as corundum originally a constituent of nepheline or other mineral and was this mineral decomposed, giving rise to less highly aluminous silicates and corundum ?[18]

Nepheline itself contains about 35 per cent. of alumina and the acidic felspars about 20 per cent. Some of the syenite masses of the district contain a very high percentage of nepheline while others consist largely of acidic or alkali felspar, nepheline being absent, and in these more highly felspathic masses considerable corundum is sometimes present. It may be said that the characteristic difference between the larger highly nephelinic masses of the district and the other syenites is the absence of corundum in the former.

Corundum in Peterborough.

Conditions of occurrence.

The occurrence of corundum in the township of Methuen, county of Peterborough, has already been referred to. This occurrence is situated about 40 miles to the southwest of the deposits in Carlow. The mineral occurs here under similar conditions to those under which it occurs in the counties of Hastings and Renfrew. It was observed both at what

[17] F. D. Adams, Am. Journal of Science, July, 1894.

[18] Fouqué and Lévy found (Synthèse des Mineraux et des Roches, p. 63) that when three parts of nepheline were fused with 1.3 parts of augite both minerals crystallized out on the cooling of the molten mass. When however a mixture of 10 parts of nepheline to one of augite was fused, augite was not reformed, but the mass contained fine crystals of nepheline, small octahedrons of spinel and dodecahedrons of garnet (melanite).

is known as Bennett's mine, lots 14 in the ninth and tenth concessions, and at Miller's mine situated across a small lake from Bennett's.

At Bennett's mine pits have been opened in the coarse-grained syenite for the extraction of light colored mica, which is here one of the important constituents of the rock. The largest of these pits is situated at the foot of a hill near the shore of a small lake, and others have been opened higher up the hill. Corundum is found in some of these openings. The color of the mineral in some of the openings is blue and the mineral is at times sub-translucent, approaching the character of the gem variety sapphire more closely than do specimens obtained from any of the localities in Hastings or Renfrew. Brown and gray varieties of the mineral are also found on this property. Some of the corundum-bearing rock in the hill contains nepheline in coarse grains or rough crystals. The corundum here as elsewhere is often much altered into light colored mica and related minerals. It also frequently shows a somewhat striking bronze-like lustre on weathered surfaces, as do also specimens from Hastings and Renfrew. In places the rock has a laminated structure.

Miller's Mine.

The Miller mine situated on an adjoining lot possesses similar geological characteristics, corundum occurring sparingly in syenite dikes, some of which contain nepheline and cut a dark gneiss. Considerable work has here been done in blasting out the rock for the extraction of mica, the rock worked being dikes of syenite. One of these is about four feet wide, and nepheline shows on its surface in coarse grains or patches at intervals along its strike, although the mineral is not observable, megascopically at least, in parts of the dike. The color of the corundum in this dike is blue.

From the fact that these dikes on the two properties spoken of have been worked for mica and also contain some corundum, it seems possible that deposits may be found from which the two minerals may be obtained together in commercial quantities.[19]

As there is a considerable development of the rock on these lots it seems likely that they will be found to form part of a band or belt which will be found to stretch across country for some distance and be similar in character to the band in Hastings and Renfrew.

The writer had very little time at his disposal on his visit to this locality, and no attempt was made to connect these outcrops with others which may occur in the district.

Other Areas of Syenite.

Areas of nepheline syenite.

The first report of the occurrence of nepheline syenite in place in Ontario was made by Dr. F. D. Adams, it having been found by him in 1893, the locality being in the township of Dungannon, Hastings county. This township lies immediately to the southwest of Carlow, the northeast corner of the former township joining the southwest corner of the latter. Nepheline syenite has since been found at a number of points in a band running across this township from east to west, and also in Faraday, a township which bounds Dungannon on the west. About 25 miles to the west of the western boundary of Dungannon, and pretty well in line with the outcrops in this township and those of Faraday, is another occurrence of nepheline syenite. This is on the farm of Mr. McColl, lot 30, in the third concession of Glamorgan, not far from Gooderham station on the Irondale, Bancroft and Ottawa railway.

No discovery of corundum in any of these three townships has been made public, and it seems unlikely that the mineral occurs in many of the outcrops of nepheline syenite as a number of these have been pretty closely studied by Dr. Adams and others, although not with the object of discovering corundum in them, the first place where the mineral was found to occur in this rock being situated in the northwest corner of Raglan, and this occurrence was made known only during the last summer. Many of the coarser grained outcrops of nepheline syenite examined by the writer in what he has roughly called the corundum belt of North Hastings and South

[19] As however white mica (muscovite) and nepheline contain about the same percentage of alumina, 35, the occurrence of much corundum in a highly micaceous rock would be somewhat abnormal. In many of the larger highly nephelinic masses corundum is absent.

Renfrew, did not contain corundum. This rock was however found in most cases to pass into rock in which nepheline was absent or sparingly present, and in such cases the mineral was usually met with. Up to the present the coarser grained outcrops or those holding the highest percentage of nepheline in Dungannon and Faraday, have attracted most attention on account of the rock being of great scientific interest. The percentage of nepheline in some of these outcrops is exceedingly high, and a person having had experience in prospecting for corundum in similar rocks to the northeast would not expect to find it in such outcrops. It seems not unlikely then that corundum does occur in Dungannon and Faraday, but the facies of the rock containing it has attracted little attention, being of a less striking character than that holding a higher percentage of nepheline.

Correlation of Syenite Outcrops.

Parallel bands of the rock.

There are then, as will be seen from the localities referred to, what may be called three bands of rock in which nepheline syenite has been found. The strike of the rock in these bands is roughly east and west, although it varies considerably. The northern band runs through parts of the townships of Carlow, Bangor, Raglan, Radcliffe, Brudenell, Lyndoch and Sebastopol, in all of which townships corundum has been found. Then there is the band stretching through the townships of Dungannon and Faraday, and what may be called a continuation of it in the township of Glanmorgan to the west. In none of these three townships has corundum as yet been reported to have been found, or at least no report of such occurrence has been published. This band lies to the south of and roughly parallel to that of Carlow, Raglan, etc. To the southwest of these again is the occurrence of nepheline syenite in the township of Methuen in which corundum has been found. This occurrence it is thought will be found to be associated with others lying to the east or west of it, and thus we may say that the occurrence of this interesting rock so far discovered in eastern Ontario can be arranged into three roughly parallel bands. The position of the outcrops of nepheline syenite are shown on the small index map which accompanies this report.

Extent of the corundum bearing lands.

The distance between the extreme western and the extreme eastern outcrops of corundum-bearing rock in Hastings and Renfrew, so far discovered, has been stated to be 30 miles. The breadth of the band over which these outcrops have been found varies considerably, but it may be stated that outcrops have been found over an area of something like 100 square miles in these counties, and the mineral rights in nearly the whole of this belt, embracing more than 60,000 acres, are held by the Crown. In the following list of lots, however, the mineral rights were granted with the agricultural rights.

List of lots included in the corundum belt as shown on map, the mineral rights of which have not been reserved in the Crown grants.

Carlow.

S. ¼ lots 14, 15, Con. 14.
N. ½ " 6, 7, " 16.
S. ½ " 15, " 16.

Raglan.

Lots 19, 20, Con. 17.
N. ½ lots 3, 4, Con. 18.
Lots 16, 17, 18, 19, 20, Con. 18.
S. ½ lots 1 and 2, Con. 19.
Lots 16, 17, 18, 19, 20, 21, 22, Con. 19.

Sebastopol.

Lots 8 and 13, Con. 4.
" 8, 9, 14, " 5.
" 8, 9, 10, 12, 13, 14, 15, 17, Con. 6.
" 10, 11, 12, 14, Con. 7.

Brudenell.

Lot 27, Con. 1.
Lots 25, 26, 27, Con. 2.
" 24, 25, 26, 27, Con. 3.
" 22, 23, 26, " 4.
" 19, " 5.
" 20, " 6.
" 16, 26, 27, " 7.
" 19, 20, 23, 24, 25, 26, 27, 28, Con. 8.

Lyndoch.

N. ½ lot 23, Con. 15.
Lot 8, Con. 15.
Lots, 23, 24, 25, Con. 16.

Radcliffe.

Lots 1, 2, 27, 28, Con. 1.
" 4, 5, 28, 29, " 2.
" 4, 5, " 3.
" 1, 27, " 4.

The Methuen outcrops in Peterborough county are situated about 40 miles to the southwest of those of Carlow. In the townships referred to in Hastings and Renfrew and in the township of Methuen in Peterborough the corundum-bearing syenites cut through a dark gneiss which possesses the acidity of a gabbro, and so are very closely allied to each other.

Dr. Goodwin's analyses show the corundum-bearing rock treated in the mill to contain in one sample of 500 lb. about 20 per cent. free alumina and about 15 per cent. combined, or a total percentage of 34.95 in the rock. This curiously enough represents the percentage of alumina in the mineral nepheline. The magnetite in the rock was found to average 4.64 per cent. and to be very free from impurities. His analyses also indicate the presence of some rare earth minerals along with the corundum concentrates from the mill run. Some years ago O. A. Derby proved that many gneisses and granites contained monazite, a rare earth mineral, and this mineral has also been found in certain syenites.

A number of points connected with the corundum industry have not been referred to in this report as it was thought they could be more properly treated of in connection with the mill test.

Literature of Corundum.

Valuable information on corundum will be found in the following monographs :

"Corundum and the Basic Magnesian Rocks of Western North Carolina," by J. Volney Lewis. Published by the State Geologist, Raleigh, N.C., 1895.

"Corundum Deposits of Georgia," by Francis P. King. Published by the State Geologist, Atlanta, Ga., 1894.

"The Rubies of Burma and Associated Minerals; their Mode of Occurrence, Origin and Metamorphoses. A contribution to the History of Corundum," by C. Barrington Brown and Prof. J. W. Judd. Phil. Trans. of the Royal Society of London, 189 •

Among other publications that should be consulted on the corundum industry are The Mineral Industry, vols. I to VI, Scientific Publishing Co., New York, and The Mineral Resources of the United States, U. S. Geological Survey, Washington, D.C.

Other Minerals

In the autumn of 1895 the writer made an examination of a number of trap dikes of the county of Frontenac and adjoining counties in eastern Ontario. One of these dikes, which cuts the graphite-holding crystalline limestone near the edge of the Rideau canal in the vicinity of the village of Seeley's Bay, attracted especial attention on account of its strongly marked columnar structure, and it was decided to make a complete chemical and microscopical examination of the rock.

Nickel in Titaniferous Magnetites.

Mr. R. W. Brock accordingly undertook a chemical examination of the rock and found it to contain, among other things, 0.612 per cent. of nickel and 46.51 per cent. of silica. It occurred to the writer that since the dike referred to contained such a comparatively high percentage of nickel the coarse grained basic rocks of the district, the gabbros, might also contain more than the usual amount of this metal. Moreover it was believed that if the theory held by some geologists concerning the origin of the deposits of titaniferous magnetite which are associated with these gabbros were true, then the magnetites themselves would be found to be nickeliferous. The theory is that the gabbros and the associated titaniferous magnetites are both of igneous origin, in any one case the gabbro and accompanying magnetite having both been formed from the cooling of one molten mass. Mr. F. J. Pope, M. A., at the writer's suggestion, undertook an analysis of specimens from a number of these titaniferous magnetite deposits in eastern Ontario and found the ore to be nickeliferous in every case examined. Samples of non-titaniferous magnetites from deposits which showed no evidence of an igneous

Deposits of Titaniferous Magnetite.

origin were on the other hand found to be non-nickeliferous. The percentage of nickel, together with in some cases a little cobalt, in the specimens examined by Mr. Pope varied considerably, as did also the percentage of titanium.

More recently Mr. O. S. James, B.A.Sc., examined specimens from two other localities for me. One of these from the township of Glamorgan gave Mr. James 0.7 per cent. of nickel (and cobalt). Some years ago Prof. Chapman made an analysis of a sample of ore from this deposit and found it to contain 0.06 per cent. of sulphur. Since Prof. Chapman's analysis shows the ore to be so low in sulphur, it seems very improbable that the entire amount of nickel found in the sample examined by Mr. James occurs as a sulphide. It cannot be claimed however that Mr. James' analysis indicates the average percentage of nickel in the ore, as only one specimen was examined by him.

In the dike which has been referred to, samples of which were analyzed by Mr. Brock, the percentage of sulphur is only 0.16, while the percentage of nickel as before stated is 0.612, showing that in this case also little of the nickel exists in the rock as a sulphide. In both these cases the nickel likely exists chiefly as an oxide in association with iron, or as a silicate. In the dike rock referred to there is considerable magnetite. A sample of ilmenite from Baie St. Paul, Que., was found by Mr. James to contain 0.6 per cent. of nickel.

The writer's reason for referring to the occurrence of nickel in titaniferous magnetites in this report is owing to his belief that the matter might be of economic interest.

Superior quality of iron smelted from titaniferous ores, and probable cause of it.

At the present time little use is made of titaniferous ores although it is generally admitted that iron smelted from them in the past was of a superior quality. It is held by some authorities that "the verdict against titaniferous iron ore has been based on insufficient grounds." It has also been stated that "these ores yielded in England a forge iron which brought double the price of common iron," and "it (the iron) went to the armor plates of Sheffield on account of its toughness, which this iron not only possesses but imparts to others in admixture." Mr. A. J. Rossi, of New York, in quoting these statements, says: "It is not our intention in this article to examine the cause of this superiority. In a general way we may say that, if it is due to titanium in the pig metal, very small quantities of this substance are then sufficient to secure such results."[20] It seems to the writer that, if this superior quality of iron smelted from titaniferous ores is due to the presence of a small amount of any substance in the iron, the substance is more likely to be nickel than titanium, since the metal is present in all the ores of this class which he has had examined. That some of the nickel contained in such ores comes down with the iron on smelting them is proved by some analyses which have been made for the writer by Mr. James. It was found very difficult to get samples of pig iron which had been produced from titaniferous ores, but one sample of iron produced from a mixture of titaniferous and other ore in Quebec was found to contain 0.22 per cent. of nickel, and a sample from New York State was found to contain 0.20 per cent. No specimens of the ore from which this pig iron was produced were examined, and the percentage of nickel in them may have been much less than in the titaniferous ore to which reference has been made.

Mr. William Lawson, B.A.Sc., kindly undertook a dry assay for me of a titaniferous magnetite containing about 0.1 per cent. of nickel. The method followed was that given in Kerl's Assayer's Manual, second American edition, pp. 300 to 315. After the metals (iron and nickel) had been extracted, in the form of a metallic button, an alloy of the two metals, from the ore by fusing the latter down with fluxes in a crucible, a portion of the button was dissolved and the percentage of nickel in the alloy was determined by means of wet reagents. It was found that nearly all the nickel contained in the ore had been extracted in the metallic form along with the iron in the button. According to Kerl this method of assaying iron ores by fusion with fluxes "gives a very fair and accurate idea of what may be expected of any

[20] The Iron Age, Feb. 6th and 20th, 1896.

particular iron ore in a blast furnace, not only as regards the yield of iron, but also the composition and action of the fluxes."

The presence of nickel in the ore as an element of value.

It is claimed by some authorities, as has been already stated, that titaniferous ores have been unjustly condemned, and that the difficulties encountered in smelting them have been unduly magnified. If such be the case and they could be used as ores, this presence of nickel in them ought to add considerably to their value. Iron produced from them is admitted by all to be of a high quality, and if this iron contained even a small percentage of nickel, which it has been shown to do, the value of the pig metal would be increased. At the present time metallic nickel sells at about 35 cents per pound. At this price of nickel, especially when we consider the comparatively low price at which iron now sells, the presence of even a small percentage of the metal in iron would be worthy of attention, as the alloy might be used directly in the production of nickel-steel. In such a case less nickel would require to be added to the iron in the process of making steel. A proportion of 0.7 per cent. of nickel, the amount in the specimen referred to, in an ore would represent a value of about $4.50 per ton of ore if all the metal could be extracted in smelting, and if only half of this value in nickel were extracted the value of the resulting iron would be considerably increased for use in nickel steel.

It seems not unlikely that deposits of titaniferous iron ore exist which contain a considerably higher percentage of nickel than those referred to, just as some pyrrhotite deposits in the Sudbury district and elsewhere contain much higher percentages of this metal than do others.

Molybdenum and Uranium.

Molybdenum as an alloy with steel.

A mineral to which the writer's attention has been frequently called in eastern Ontario, and of which he has been shown numerous specimens by prospectors, is molybdenite—the ore of molybdenum. Many persons have asked if there was a market for the mineral. Up to the present there has been little demand for it. More attention appears to be directed to the metal recently for use as an alloy with steel. It is claimed that molybdenum and some other metals have an effect on steel similar to that of nickel when alloyed with it. In a short article on the subject in the Engineering and Mining Journal of New York, March 19, 1898, it is stated that "Some mention has been lately made in foreign papers of a new process for making armor plate. . . . The French Government has bought the right to use this process from the inventor, but the details have been carefully kept secret. . . . Enough is known of the process to say that it requires the use in making the steel of some of the rare metals, molybdenum, uranium and vanadium, which take the place of nickel in the alloy used. We are informed by a correspondent who has made many researches into the rare elements that agents believed to be acting for the French Government are now in this country in search of deposits from which these metals can be obtained." Compounds of molybdenum are used as chemical reagents, and in giving brilliant blue colors to pottery, and also in coloring silks and woolens. Within the last five years or so it has been found possible to produce metallic molybdenum in a much purer form than formerly for commercial purposes.

Molybdenite is apt to be mistaken for graphite, and vice versa, by persons slightly acquainted with the mineral. It is composed of 59 per cent. of the metal molybdenum and 41 per cent. sulphur.

Molybdenum has been found at many places in eastern Ontario. Some of the localities where it occurs are lot 22 in the second concession, lot 7 in the ninth, and other lots in the township of Ross, in Renfrew county. It has also been found on lot 14 in the fifth concession of North Crosby, in Leeds, and at numerous other places in our Laurentian rocks.

It is interesting to note that uranium also occurs in the eastern part of this Province.

Presence of uranium and chromium in iron ores.

A mineral, uran-ochre, was found many years ago lining fissures in magnetic iron ore on lot 11 in the fifth concession of Madoc, in Hastings county. In a letter on Iron Ores of Ontario, Prof.

E. J. Chapman, late of the University of Toronto, said: "I have obtained certain somewhat curious results which do not appear to have been hitherto recognized, and which may perhaps interest some of your readers, more especially as these results may not be without practical bearings on the value of Ontario ores. It has long been known that some of the ores in the iron districts of Ontario are more or less titaniferous, the percentages of titanium being in certain examples so high as to render the ore unmerchantable, whilst in others it is sufficiently low to be practically of no account. I now find that in almost every non-titaniferous magnetite from this region (chiefly counties of Haliburton, Victoria, Peterboro', Hastings, Frontenac and Addington) traces or small amounts of either chromium or uranium are present, in addition of course to the normal components, ferrous and ferric oxides. Delicate coatings of hydrated uran-ochre were observed about thirty years ago by Dr. Sterry Hunt on the sides of narrow fissures in the Seymour iron deposit of Madoc, and this substance was discovered a year or two later by the writer, under somewhat similar conditions, lining minute cavities in a magnetic iron ore from Snowdon township in Peterboro'. But the actual presence of uranium as a so-called accidental component of our iron ores seems hitherto to have escaped recognition. So far as my observations go it is only occasionally present; but chromium, on the other hand, although as a rule in very minute proportions is almost invariably a constituent of these ores. But the curious point is this: when titanium is present in an ore both chromium and uranium appear to be entirely absent, and the presence in a magnetite of either of the latter metals appears to exclude that of the other."[21] I have thought it well to quote thus fully from Prof. Chapman's letter as he does not appear to have published his results in any technical journal.

As has already been stated, the titaniferous ores from the region which are referred to by Prof. Chapman have now, in all samples which the writer has had examined, been found to be nickeliferous. The presence of even a small amount of these metals—nickel, chromium and uranium—in an iron ore is of importance if the ore is to be used for the production of steel. If these metals are reduced along with the iron the precentage of them required to be added to form a steel alloy is lessened. Samples of pig iron which the writer has had examined have been found to contain two-tenths of one per cent. of nickel. This amount is small, it is true, but if the iron is suitable for use in nickel steel in other respects this percentage of nickel would add considerably to its value, besides improving its quality. Two-tenths of one per cent. represents four pounds of nickel to the ton, or adds about $1.20 to the ton of iron, a sum worthy of consideration when thousands of tons of such iron are in demand.

Commercial value of chromium and uranium in iron ores.

Tungsten and Vanadium.

The mineral wolfram, which is a tungstate of iron and manganese, was found many years ago by Prof. Chapman in a boulder of Laurentian gneiss on the north shore of Chief's island, lake Couchiching.[22] This boulder was likely carried from the north by glaciers, and it is impossible to say how far it was transported. The distance may have been small or great. Since tungsten is now a substance of considerable value for use in alloy with steel, prospectors among our Archæan rocks should be acquainted with the character of its ore.

Wolfram.

Mr. F. J. Pope, M.A., late demonstrator in the Kingston School of Mining, informs the writer that he finds the titaniferous iron ores of eastern Ontario to contain small amounts of vanadium, and that there appears to be, so far as his work has gone, a relation between the amount of titanium and the amount of vanadium in the ores.

Vanadium.

Iron Ores.

During the last few months there has been some revival of activity in the mining and shipping of iron ores in the eastern part of the Province. Ore has been shipped from a couple of points on the Kingston and Pembroke railroad and from

Revival of iron mining.

[21] The Toronto Daily Mail, Nov. 19, 1890.

[22] Canadian Journal, 2nd Series, vol. i., p. 308 and vol. v., p. 303.

two or three deposits in Hastings county to the Hamilton furnace. Some ore from the vicinity of Calabogie has also been shipped to the Drummond furnace in the Province of Quebec. There is a good prospect of erecting a charcoal furnace at Deseronto this year, and there has also been some agitation for the erection of a furnace in the vicinity of Bancroft, although it may go to a point farther west.

Gold Mining.

Considerable prospecting has been done for gold deposits in Hastings and other counties of this part of Ontario during the last year. This is due no doubt partly to the revival of interest in gold mining which has affected many parts of North America during the last few years, and partly to local causes, the chief of which is the working of the well known Deloro mine in the township of Marmora.

Deloro mine in Marmora.

Lead and Bismuth.

There also appears to be a revival of interest in the ores of lead. Late in 1897 the lead smelting plant which was erected in the city of Kingston in 1879 to treat the galena from a deposit in the township of Loughborough, known as the Frontenac lead mine, was sold to some Toronto gentlemen. They also have the Frontenac mine under lease. Galena occurs in a number of other townships in eastern Ontario.

Bismuthinite, an ore of bismuth, occurs on lot 34 in the third concession of the township of Tudor, Hastings county. The mineral has also been found in the township of Lyndoch, Renfrew county. Some months ago specimens of minerals said to be collected in the township of Barrie, Frontenac county, were sent to the laboratory of the Kingston School of Mining for determination. One specimen sent by John Bey, at Mazinaw lake, proved on examination to be bismuthinite, as did also another specimen collected by C. H. Spencer of Roblin. The metal bismuth is used in making fusible alloys, and some of its compounds are used in medicine. Bismuth is quoted at from $1.30 to 1.80 per pound.

Discoveries of bismuthinite.

Marble and Granite.

Extensive beds of crystalline limestone from which marble of good quality can be produced are known to occur in different parts of the Laurentian area of eastern Ontario. Up to the present however little has been accomplished towards developing the industry, most of the marble used in the Province being imported from the eastern United States. A marble manufacturer informed the writer some years ago that chiefly the poorer grades of United States marble were marketed in Canada. He also expressed the opinion that specimens of Ontario marble shown him were of good quality and that it ought to be possible to develop an industry in the Province. It is difficult however to overcome trade prejudices concerning marbles and some other mineral products. The writer has had some enquiries from manufacturers in eastern Ontario concerning granite suitable for monumental and other purposes. No systematic examination of the granites in this part of the Province has been made, but it seems not unlikely from the great many varieties of the rock that are known to occur here that varieties suitable for different commercial purposes can be found.

Probability of obtaining good samples.

A Mineral of the Columbite Group.

For some years crystals of beryl have been obtained by different mineralogists from Mr. Alexander Parks, the well known collector of the township of Sebastopol, Renfrew county. The location of the deposit from which these specimens came was said to be known only to Mr. Parks and to Mr. J. Sullivan, the discoverer of the deposit. Although the writer had never enquired of these gentlemen where the specimens were obtained, he was told by members of the staff of the Geological Survey, who had purchased specimens, that the deposit from which they were obtained was said to be situated in the township of Sebastopol, but that Messrs. Parks and Sullivan declined for some reason to make the exact location of it known to the public. It seemed to the writer that since the ore of tin is sometimes found associated with beryl the

An occurrence of Beryl in Lyndoch.

deposit might have some economic importance, and moreover the mode of occurrence of the beryl itself would be of interest. For these reasons it was decided to be in the public interest that the location of the deposit should be made known, especially as this could work no injustice to Mr. Parks or Mr. Sullivan. The writer accordingly gave all the information possessed by him concerning the specimens of beryl to his assistant, Mr. R. T. Hodgson, and instructed him to make enquiries concerning the location of the deposit while prospecting for corundum in the townships of Lyndoch and Sebastopol. During the progress of his work Mr. Hodgson met Mr. P. Casey, who informed him that he had come across the beryl occurrence some time before. Mr. Casey promised Mr. Hodgson to show it to the writer, which he did some days afterwards.

The deposit is situated well down the face of a high hill, which faces the Quodville road on lot 23 in the fifteenth concession of Lyndoch, and is several miles distant from the part of the township of Sebastopol, in which it had been supposed to be situated. The part of the face of the hill where the outcrop occurs is covered for the most part to a considerable depth with a layer of soil and boulders. The outcrop itself as now exposed is of small size, being about 15 yards in length. The rock matter on the western end of the outcrop consists of large masses of green felspar or amazon stone and quartz. These minerals show a rather sharp contact, and the masses of them have a diameter of some feet. Associated with these minerals is some black mica and beryl which is imbedded in the quartz. The beryl crystals are of different sizes, being generally much elongated but with imperfect terminations. Some of the crystals have a diameter of six inches. One crystal was seen imbedded in the quartz which had a length of over 30 inches and a diameter of three inches. On the eastern end of the deposit the felspar has a pink or reddish color, and was found on microscopical examination to possess a microcline base through which is set plagioclase, thus making it a microcline microperthite. The surface of this part of the deposit is much broken up, the felspar and associated quartz, which is generally smoky in appearance, being in loose fragments. It is in this part of the deposit that the mineral occurs which has been determined to belong to the rare columbite group.

Rock formation of the outcrop.

On making an examination of the deposit, my attention was at once attracted to this dark colored mineral. It is black in color, possesses a sub-metallic lustre and occurs imbedded in the felspar. The plates conform somewhat closely to the cleavage planes of the felspar and in some cases are of considerable size. In one specimen obtained the diameter of the plate was about six inches, and its thickness one-sixteenth of an inch. The plates in some cases at points on one of their surfaces expand into nodules, which thus possess one rounded and one plane surface. The plane surfaces of the nodules are generally quite smooth and well polished, but the centre shows a tendency to be slightly raised above the other part of the surface. The rounded surface of the nodule is somewhat rough. On the plane surface the nodule is seen to have a strongly marked concentric structure and a fairly well defined, finely radiated structure is also observable. The general appearance of the plane surface of the nodules and the arrangement of the nodules in the felspar can be seen in figure 3 which is a reproduction from a photograph in which a number of nodules of different sizes are shown. The arrangement of the plates in the felspar is shown in figure 4.

Examination of the Columbite mineral.

The specific gravity of one nodule, weighing 7.51 grams, was found to be 5.36. Another specimen consisting of two nodules joined together and weighing 21 grams had a specific gravity of 5.38. Both specimens had a small amount of felspar attached to them, so that the specific gravity given is slightly low, but is believed not to exceed 5.39 or at the most 5.40. This specific gravity agrees with that given for some varieties of columbite. As the specific gravity of the mineral columbite rises, it passes, by substitution of the element columbium (niobium) for tantalum, into the closely related mineral tantalite.

A part of one nodule was pulverized and digested with sulphuric acid. The solution was diluted and filtered. After the addition of hydrochloric acid and metallic zinc to the solution it was boiled, when it took on a blue color which was retained for some time on letting the solution stand. This reaction also serves to distinguish columbite from tantalite, the latter mineral not giving this reaction after being digested with sulphuric acid. Other related minerals however, such as samarskite, give a similar reaction to columbite, but the specific gravity and lustre of the nodules distinguish the mineral from samarskite.

Dr. W. L. Goodwin has made a preliminary analysis of a part of one of the nodules. Owing to the rarity of the constituents of the mineral, and the consequent imperfect methods of separation applicable to them, his results can be considered only as provisional. Pressure of other work has not as yet permitted a complete quantitative analysis of the mineral. Dr. Goodwin states:

"A quantitative analysis, in which however the separations were afterwards shown to be imperfect, indicates the following composition:

Rare acids	75.75	per cent.
SnO_2	0.92	"
FeO	11.14	"
MnO	10.22	"
CuO	0.03	"
Rare earths	2.00	"
	100.06	

Among the rare acids niobic and tantalic were identified. The rare earths present in this mineral include ceria, didymia and the yttria group."

Specimens of the material for analysis have also been furnished to Mr. H. R. Carveth, B.A., Fellow in Cornell University.

Economic interest of the mineral.

The chief economic interest attached to this mineral is connected with the fact that it contains a small amount of the metal tin, and that columbite and the ore of tin, cassiterite, are sometimes found associated. Mr. W. P. Headden states[23] that in the deposits examined by him in South Dakota the columbite is not always associated with the cassiterite, but he has found no columbite where cassiterite did not occur in the same vein—sometimes, though not always, intimately associated with it. The columbite in the Black Hills is also associated with beryl. In connection with the occurrence of the amazon stone and columbite, it might also be stated that columbite has been found associated with the large crystals of amazon stone which occur in El Paso county, Colorado.[24]

These and other points of resemblance among widely separated deposits of columbite and related minerals in different parts of America are of interest.

Other related minerals.

There is also embedded sparingly in the felspar another mineral which has not as yet been subjected to careful examination, but it appears to be a columbate. It has a vitreous lustre, is shining black in color, has a conchoidal fracture and resembles rather closely in general appearance certain specimens of the natural glass obsidian. Its appearance is not unlike that of samarskite. There is also a brown mineral which appears to belong to the same chemical class as the two already described. Some of the plates and nodules of the black sub-metallic mineral described appear to be more or less intermixed with the brown material, which is also probably a columbate. The mineral columbite itself is sometimes of a brown color.

In connection with the black obsidian-like mineral referred to, it is interesting to note that Prof. William Ramsay and Mr. M. W. Travers recently published a paper on the mineral fergusonite,[25] which is a mineral related to columbite, being mainly a columbate of yttrium. Fergusonite is also not unlike obsidian in outward appearance. In referring to their experiments on fergusonite Prof. Ramsay and Mr. Travers state that "its evolution of heat, accompanying its parting with helium, suggest the idea that it is a true endothermic compound of helium." A number of similar minerals contain helium

[23] Am. Journal of Science, vol. xli., p. 90. 1891.

[24] J. L. Smith, "Examination of American Minerals," Am. Journal of Science, vol. xiii., p. 362. 1877.

[25] "Fergusonite an Endothermic Mineral," Proceedings of the Royal Society of London, vol. 62.

which is expelled on the application of heat. It would be interesting to have some of these Canadian minerals from the Lyndoch deposit examined for the presence of this element.

Black tourmaline is quite abundant in the deposit, being sometimes in large crystals which have the prismatic planes well developed. Pink fluorspar is present filling cavities in the felspar, and there is also a little magnetite.

This association of minerals is characteristic of deposits in which columbite and related minerals occur. It is interesting to note how frequently the more characteristic minerals of this deposit—beryl, tourmaline, fluorspar and the rare columbates—are found occurring together.

Another point worth mentioning in connection with this deposit is the form which the pink felspar sometimes exhibits. At times this mineral occurs in thin plates. This structure of the felspar in one of the columbite deposits of the Black Hills of South Dakota has been observed by Mr. W. P. Headden,[26] who states that "this felspar is probably an alteration product, as is suggested by its mode of occurrence and by the fact that the small spodumene crystals which occur in this association have undergone complete change."

So far as the writer knows the Lyndoch deposit is the first deposit in Ontario in which minerals of the columbate or tantalate group have been found. Samarskite was found some years ago in Berthier county, Quebec.[27] Beryl, on the authority of Dr. Bigsby, is stated to occur on the eastern side of Rainy lake, but the reported occurrence does not seem to have been verified by workers in that district in recent years.[28] Other localities in Canada where beryl is known to occur are Brassard and De Maisonneuve in Berthier county, Quebec, and on the north shore of lake Kenogami, Chicoutimi county, in the same Province. Beryl has also been found in a mica deposit at Tête Jaune Cache, Canoe river, B. C.

Other occurrences of Beryl.

Considerable work will have to be done in removing soil and boulders before a complete description of the Lyndoch deposit or of the minerals which occur in it can be given. It seems advisable that some work should be done in opening up the deposit, both on account of its scientific interest and of the possible economic bearing which it may have. Numerous coarse dikes or veins composed essentially of quartz and felspar occur in the district. Some years ago the writer examined dikes of this character in the district some miles south of the Lyndoch deposit. These dikes contained considerable fluorspar and thus would seem to have been subjected to agencies similar to those which have acted on the Lyndoch deposit. Moreover specimens of a rock similar in mineralogical composition to greisen, the rock in which tinstone occurs, have been obtained not far from the locality of these dikes.

Further exploration called for.

Kyanite.

Quite recently while visiting the Golden Fleece mining location, lot 25 in the sixth concession of Kaladar, the writer found the mineral kyanite or cyanite in place on the southern half of the lot. This mineral, while of little economic interest, is of comparatively rare occurrence in this country, and it was thought it might be well to make a note of its occurrence here. Up to within a few years ago the only known occurrence of the mineral in Canada was that of Wahnapitae station near Sudbury. The mineral has also been found on Snake creek, Pontiac county, Quebec, and near Summit creek, Kootenay, B. C. In Kaladar it was found imbedded in small masses or stringers of quartz in a mica schist which is associated with a mass of coarse metamorphosed conglomerate of the so-called Hastings series. The outcrop of the mineral is near the contact of the schist with an area of dark

Occurrence of the mineral in Kaladar.

[26] Am. Journal of Science, vol. xli., p. 90, 1891.

[27] G. Chr. Hoffmann, Am. Jr. Sci., vol. xxiv., p. 475, 1882.

[28] "On the west side of this horn [the northeast arm of Rainy lake, called Seine bay], ten miles from its north end, in a narrow side-bay, four miles long, I found well characterized prisms of beryl, and in two spots; but I had no time for a careful search for more."—The Shoe and Canoe Pictures of Travel in the Canadas, by John J. Bigsby, M.D., vol. ii, p. 265.

basic gneiss, the line of contact being well marked by a narrow valley which runs southward from the point where the shafts have been sunk on the gold deposit. Associated with the kyanite in the quartz is considerable magnetite, and since these minerals occur near the contact with the basic gneiss it would seem as if the iron and alumina might have been derived from this rock. The mineral occurs in bladed crystals which at times approach a subfibrous structure. Most of the crystals observed were nearly colorless, but some of them exhibited the characteristic blue color. Fairly well formed crystals of black tourmaline are abundant in some of the quartz stringers in the black gneiss.

Analyses of Corundum and Corundum-Bearing Rock

By W. L. Goodwin

THE analysis of corundum for the determination of alumina, oxides of iron, silica, etc., was made in the usual way by fusion with sodium bisulphate as described by J. Lawrence Smith,[29] but the solution of sulphates was divided, one part being used for the estimation of Al_2O_3 and Fe_2O_3 by precipitation, and the remainder for the estimation of Fe_2O_3 by reduction and titration. The loss on ignition was determined by igniting for two hours over a high temperature burner. The filtrate from the ammonia precipitate was tested for calcium and magnesium, and found in some cases to contain traces. The ammonia precipitate was not treated for the separation of calcium. Another method employed was by fusion with a mixture of eight parts of sodium bisulphate and three parts of potassium acid fluoride. The finely powdered corundum was found to dissolve in this flux very rapidly, but it had the disadvantage of not permitting of the estimation of silica in the same portion. A third method of attack was by evaporation with hydrofluoric acid and a few drops of sulphuric acid, the insoluble part being taken as alumina. This it was proved to be in several cases by fusion with sodium bisulphate, dissolution, and precipitation with ammonia in the well-known way. The iron and alumina were then estimated in the part dissolved by the acids.

Methods of analysis.

Of the following analyses, *A*, of selected corundum crystals, was made by Dr. Adolf Lehmann; *B*, of selected grains from corundum concentrates was made by the writer; and *C*, of corundum crystals levigated,—the coarser particles being rejected, was made by Mr. J. Walter Wells. *A* was analysed by fusion with sodium bisulphate and *C* with the mixture of this salt and acid potassium fluoride. With *B* the hydrofluoric acid method was used.

Determinations of corundum.

Sample.	Al_2O_3	Fe_2O_3	Insoluble	Loss on ignition.
A	96.92	....	1.36	2.43
B	96.26	0.36	....	1.93
C	97.27	0.32	....	....

The silica was determined by Mr. Wells in three samples of the corundum crystals, and found to be 0.05, 0.07, and 0.09 per cent. respectively. In attempting to get sample *B* into solution by fusion with acid sodium sulphate a small quantity remained insoluble even after three fusions. Only a small portion of this was silica, as was shown by evaporating with hydrofluoric and sulphuric acids. The remainder yielded readily to acid potassium sulphate, and was shown to consist of the cerite earths.

In the library at our command I have been unable to find a chemical method for the commercial analysis of corundum rock. An attempt has been made to work out a method based on the fact that corundum, especially after ignition, is nearly insoluble in hydrofluoric acid, while the rock matter, unless it contains such constituents as barium sulphate, is completely soluble. In preparing the samples for treat-

Preparing the samples for treatment.

[29] American Journal of Science, 2nd Series, X, 366.

PLATE I.
CRUSHING CURVES OF CORUNDUM ROCK, HASTINGS CO., ONT.

Solid line — — — Crushed in Blake Crusher, 1"
Dashed line - - - - - - - - - " " Rolls, $\frac{1}{8}$"
" and dotted line — · — " " " $\frac{1}{16}$"

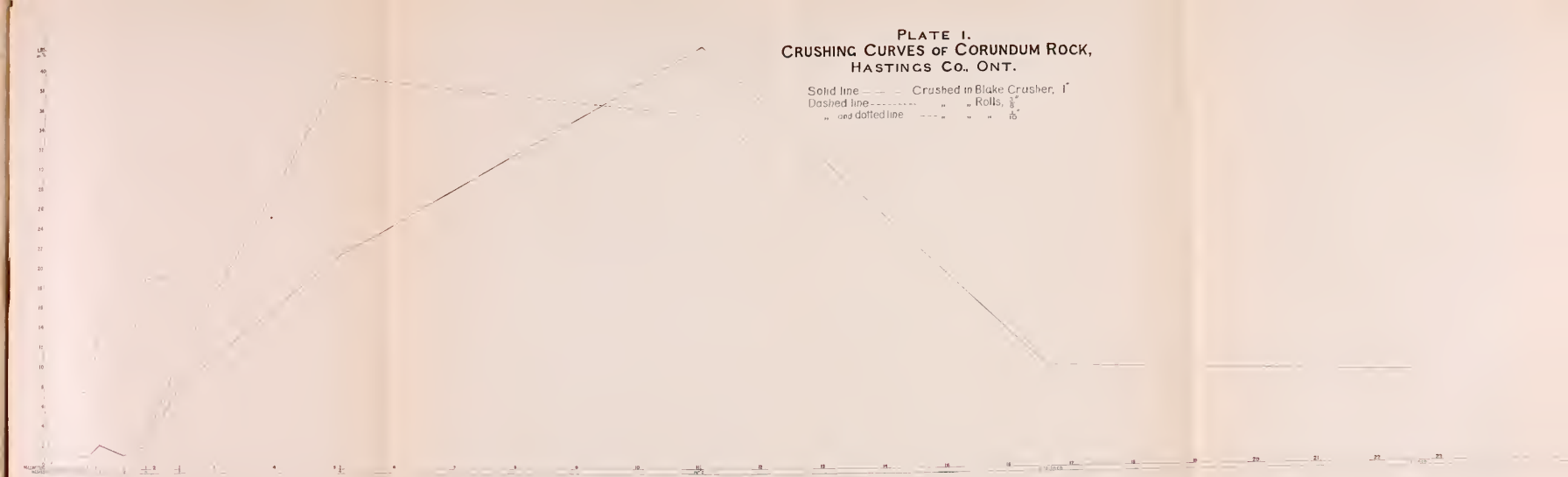
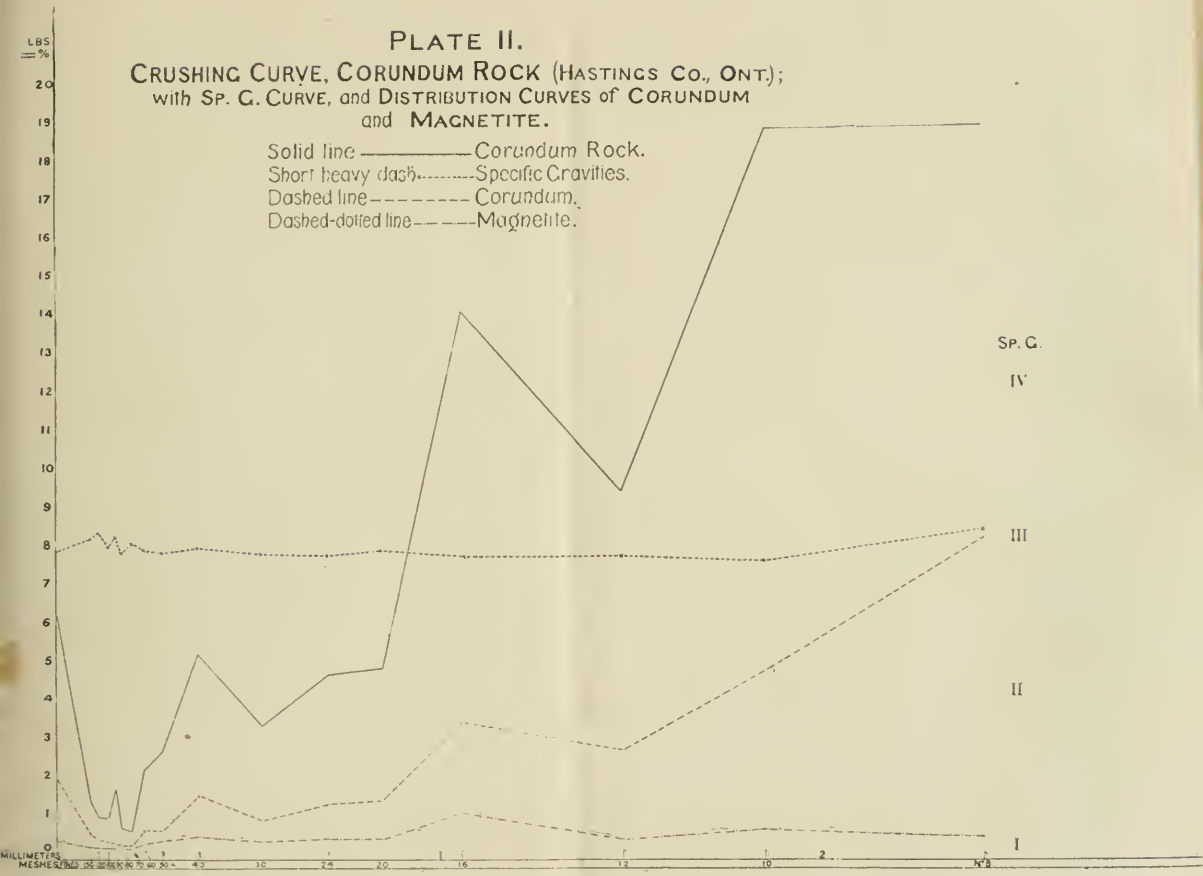


PLATE II.

CRUSHING CURVE, CORUNDUM ROCK (HASTINGS CO., ONT.); with SP. G. CURVE, and DISTRIBUTION CURVES of CORUNDUM and MAGNETITE.



basic gneiss, the line of contact being well marked by a narrow valley which runs south-

have been derived from this rock. The mineral occurs in bladed crystals which at

[29] American Journal of Science, 2nd Series, X, 366.

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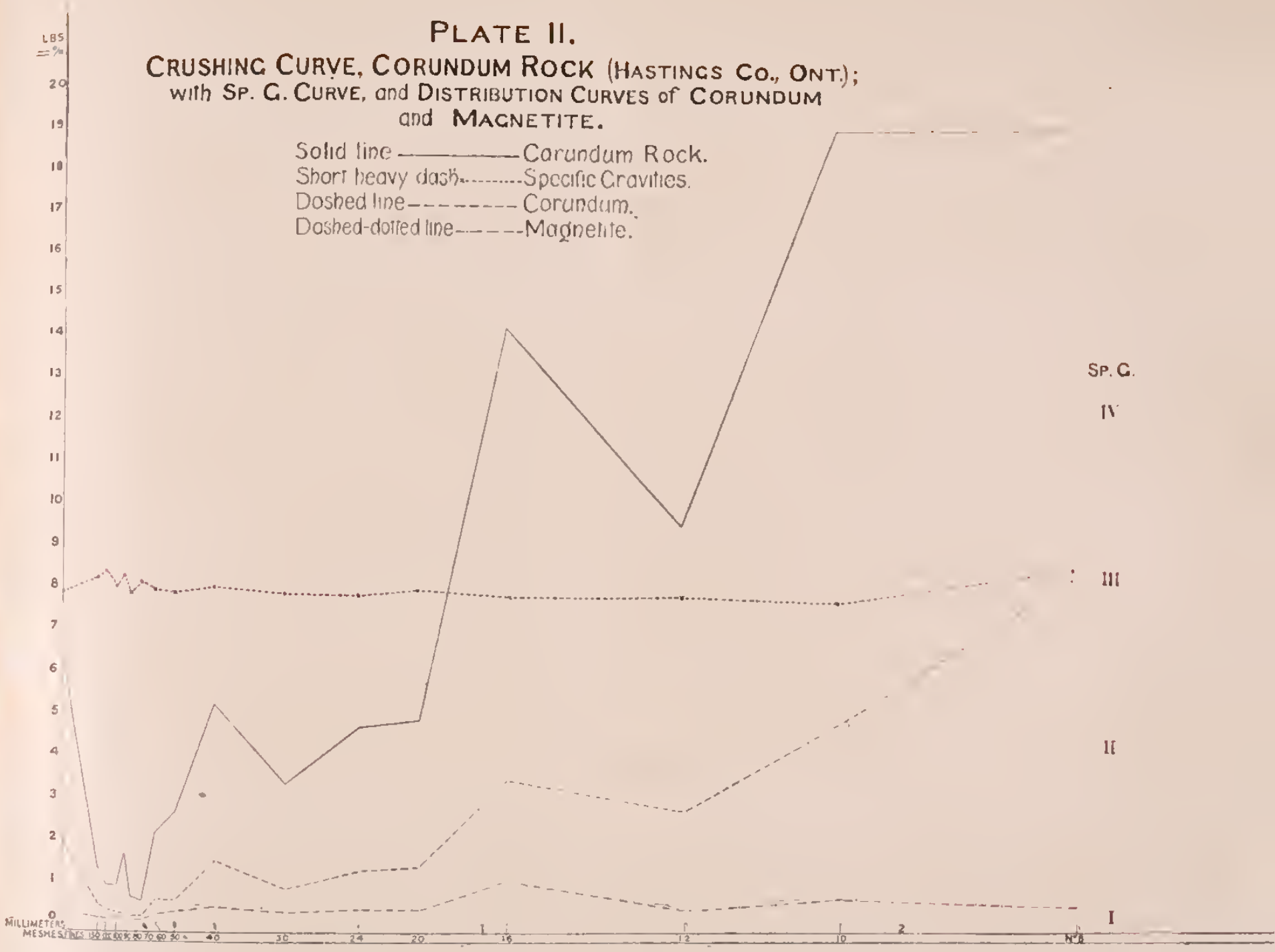

PLATE III.

CRUSHING CURVE, CORUNDUM ROCK

RENFREW CO., ONT.

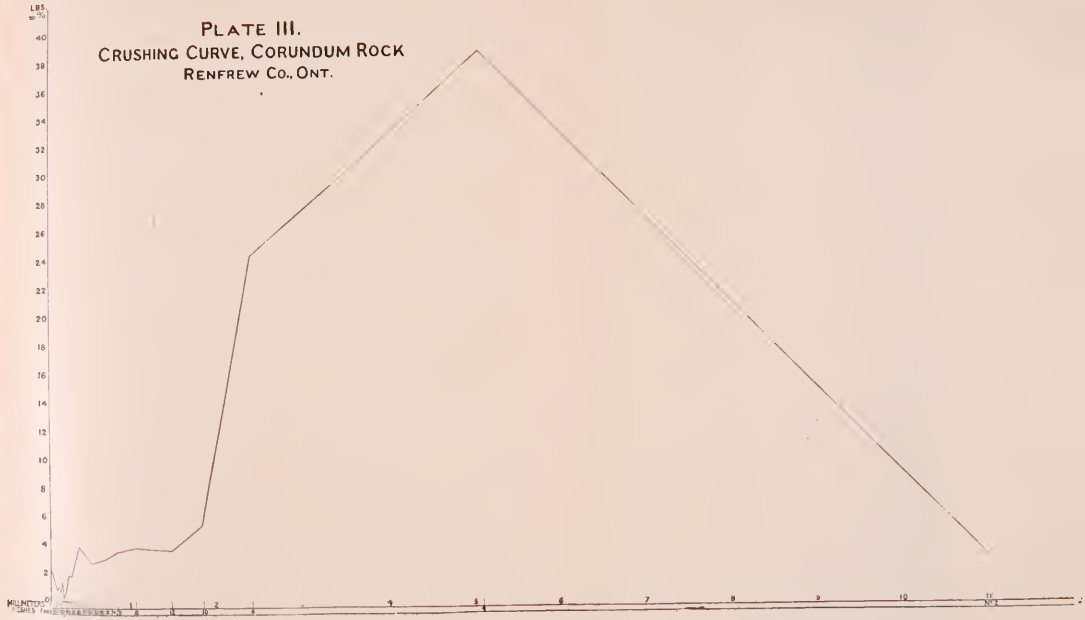

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PLATE IV.

TEST A.—CHART SHOWING EXPERIMENTAL LINE OF TREATMENT IN CONCENTRATION OF CORUNDUM ROCK.

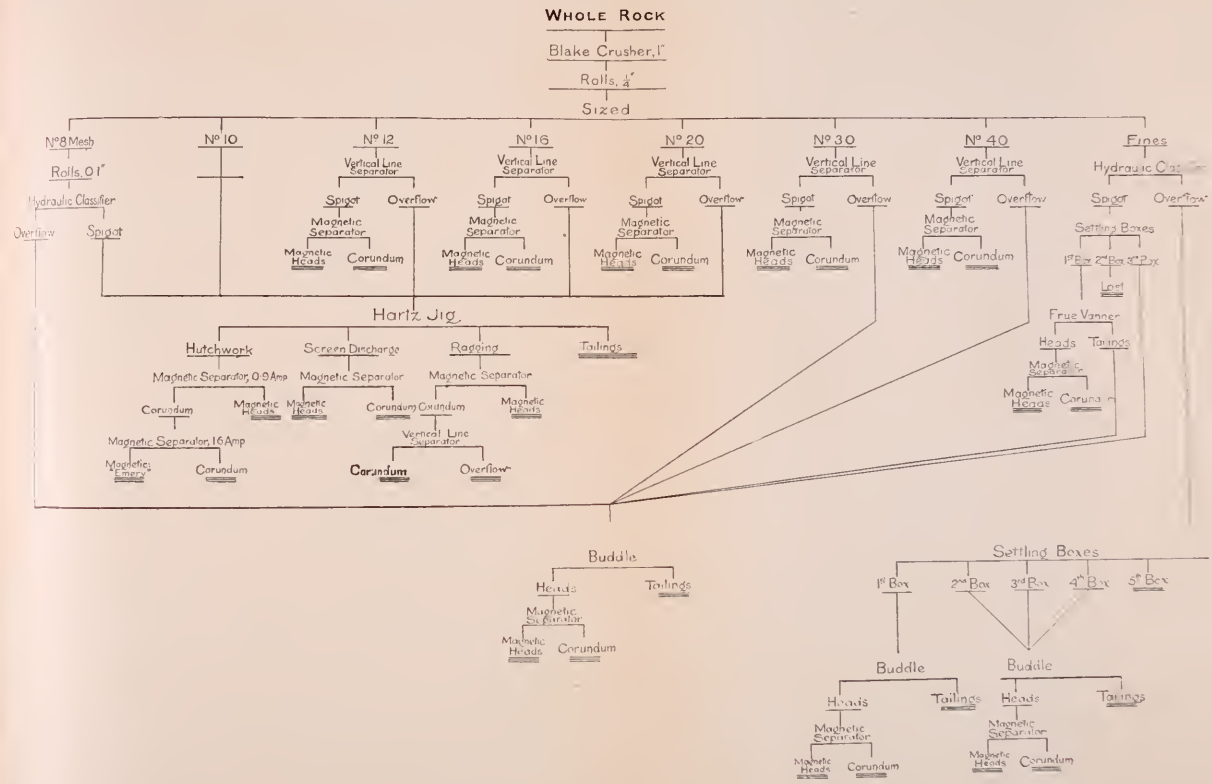
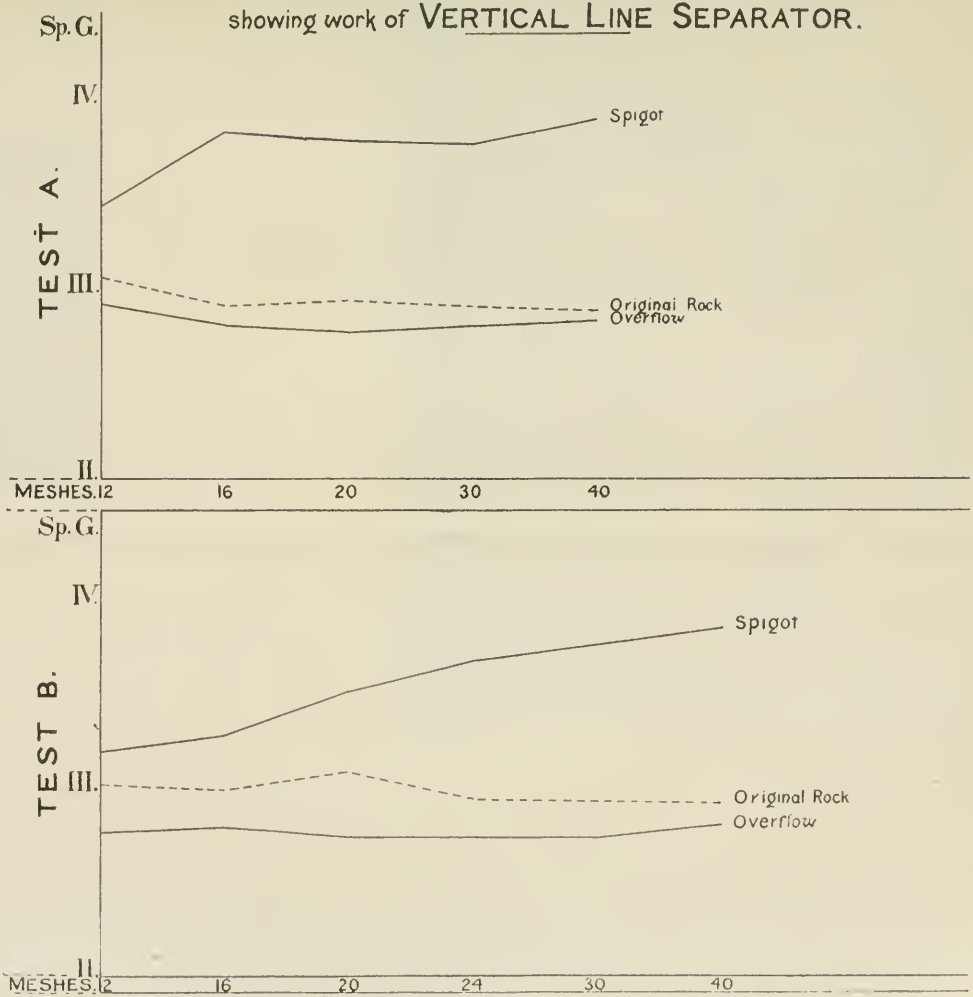


PLATE VI.

SPECIFIC GRAVITY CURVES of SPIGOT DISCHARGE and OVERFLOW, showing work of VERTICAL LINE SEPARATOR.



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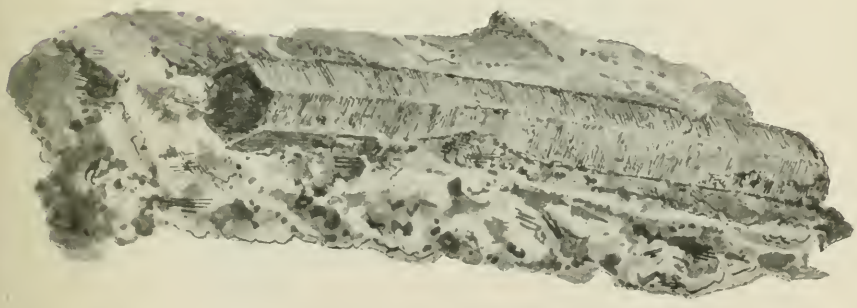
Corundum crystals from Carlow, Raglan and Brudenell—5-12 natural size (p. 215).

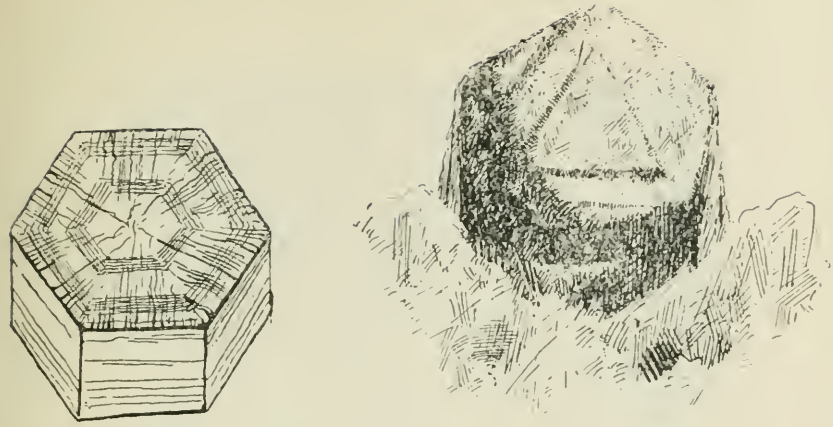
Narrow dike of corundum-bearing syenite cutting dark gneiss, from Carlow (p. 211).

Crystals of Beryl in felspar with Columbite on smooth face in upper left hand corner, from lot 23, con. XV, Lyndoch—1-3 natural size (p. 234).

Corundum crystal from Brudenell—natural size (p 215.)



Corundum crystal from Brudenell—natural size (p. 215).



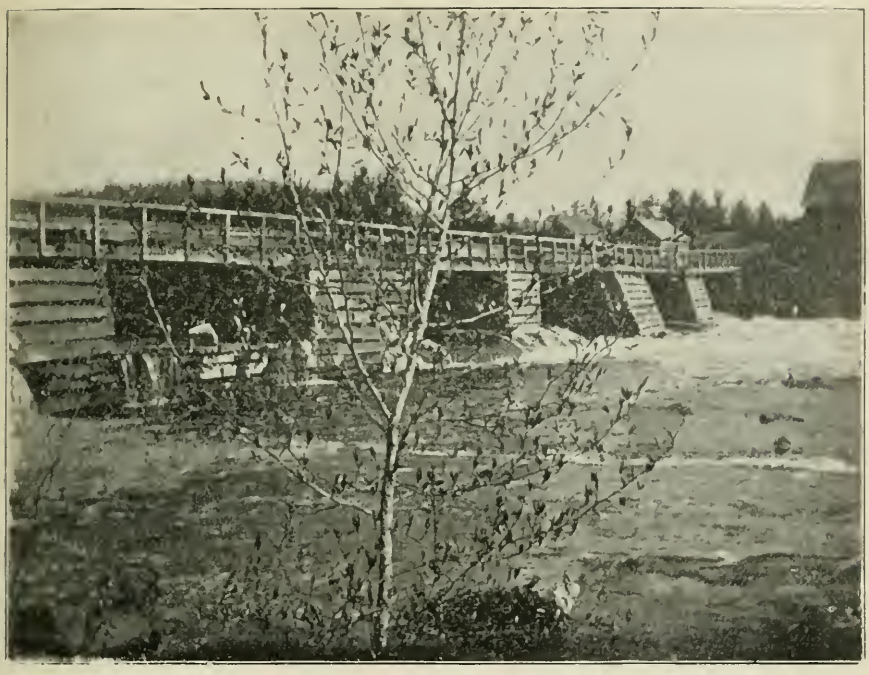
CORUNDUM CRYSTALS.

1. Isomorphous layering. From Tschernak's Mineralogie (p. 216). 2. Rombohedral plate on basal plane of prism Crystal from Carlow (p. 216).

Magnetite in place of corundum, in syenite.

Corundum crystals in nepheline syenite, from lot 34, con. V, Brudenell—1-3 natural size (p. 216).

Emery: mixture of coarse grains of magnetite and light colored corundum, from Brudenell—3-4 natur



Lower dam and bridge at Palmer's Rapids on the Madawaska river (p. 219.

Section of lower dam and bridge at Palmer's Rapids (p. 219.)

3 Nodules of mineral of the Columbite group in felspar, from lot 23, con. XV, Lyndoch—5-6 natural size (p. 235).

4. Thin layers of mineral of the Columbite group in felspar, from lot 23, con. XV, Lyndoch—5-11 natural size (p. 235).

ment they were either powdered in a diamond mortar, levigated, and then purified from metallic iron by digesting with acetic acid; or a weighed quantity was ground in a large agate mortar covered in such a way as to prevent loss. The silica taken up from the mortar was each time estimated by the gain of weight, but as it was volatilised in the subsequent treatment by hydrofluoric acid, this was hardly necessary. The ignited sample is evaporated on a water bath in a platinum dish or large platinum crucible with about 10 c. c. hydrofluoric acid and a few drops of sulphuric, the quantity of each being increased in proportion to the rock matter. The last traces of hydrofluoric acid come away very slowly. The residue is treated with water and a little sulphuric or hydrochloric acid and filtered through a very close filter. The finely ground corundum tends to pass through the filter. The washed insoluble residue is ignited and weighed. Three samples of A1 treated in this way gave 20.10, 20.51 and 19.28 per cent. insoluble. The insoluble residue from the first sample was fused with acid sodium sulphate and acid potassium fluoride, dissolved, and precipitated with ammonia. The precipitate amounted to 20 per cent. of the sample. Trials with samples richer in corundum gave fairly concordant results, although there were occasional large variations due probably to variations in the procedure.

Results of the investigation.

The following tabulated results contain the principal information obtained in the course of this investigation, which is still in progress:

Sample A is from a 500 lb. lot submitted to concentration by Prof. De Kalb.

Sample B is from the oversize from the first screening of the 1250 lb. lot (Test B of De Kalb's experiments in concentration), representing 698 lb.

Sample C is from the undersize from the same screening of the 1250 lb. lot, representing 552 lb. These last two samples taken together represent the whole lot of rock treated in Test B, which would give an average of 15.69 per cent. insoluble, and of 1.8 per cent. loss on ignition.

Sample D represents the tailings from the jigging in Test A, which had a specific gravity of 2.695.

Sample E represents a lot from Test B which had undergone the following treatment: 1st, crushed to $\frac{3}{8}$ in.; 2nd, screened; 3rd, the oversize rough jigged; 4th, the hutchwork crushed and separated in a hydraulic classifier; 5th, the spigot discharge jigged; 6th, the hutchwork screened through a No. 30 mesh sieve; 7th, the oversize passed through the Wetherill magnetic concentrator, using a current of 0.9 ampère to remove the magnetite.

Sample F represents the cleaned corundum from the last operation mentioned above, passed again through the Wetherill magnetic concentrator, using a current of 16 ampères, to remove the "emery."

Sample G represents the hutchwork from the jigging in Test A, which had been passed through the Wetherill magnetic concentrator, first with a current of 0.9 ampère, and again with a current of 16 ampères.

Sample.	Insoluble.	Soluble Al_2O_3.	Total Al_2O_3.	F_2O_3.	SiO_2.	Loss on ignition.
A	19 96	14.99	34.95	9.41	....	1.29
B	19.16	16.19	35.35	9.71	....	1.72
C	11.32	.....	.....	....	....	1.91
D	2.87	.....	.....	....	....	1 65
E	90.76	2.45	93 21	1.64	2.85	1.58
"	.....	.....	93.78 (by fusion)..		....	....
F	93.48	2.00	95.48	0.39	0 40	2.19
G	93.01	.....	.....	0.38	....	1.80

The Concentration of Corundum

By Courtenay De Kalb

I BEG herewith to submit a report upon certain practical tests in the concentration of corundum rock, which have been made under my direction in the Kingston School of Mining. At the outset I wish to state that the work done has involved comparatively little original research, the problem being to ascertain how best to employ the customary methods of concentration in the production of high grade corundum concentrates. There exist some peculiar difficulties in determining the percentage of extraction obtainable under any conditions, since it is not feasible to definitely ascertain, by any simple direct test, either the amount of corundum in the original rock, or the quantity remaining in the tailings after concentration. Concerning the difficulties of estimation of the corundum by chemical analysis, the foregoing paper by Dr. W. L. Goodwin will afford explicit details. The specific gravity method gives results of comparatively small value (except after elimination of the magnetite), any effort to estimate the percentage of mixed barysomes in a given sample being futile for purposes of accurate work. The existence of magnetite (sp. g. 4.9 to 5.2) as an associate of the corundum (sp. g. 3.9 to 4.11), and the variation in the proportion of these minerals in the different sizes of the crushed rock, render it impossible to judge more than approximately from the specific gravity what amount of corundum may be present. The fact however that the proportion of magnetite to the corundum increases with considerable regularity with fineness of grade up to No. 150 mesh, gives to the specific gravities a certain value in comparing the different grades. The specific gravity of the whole ore appears to be about 2.9, although the determinations made range from 2.8 to 3.1. Calculating on the basis of an average specific gravity of 4 for the barysomes or heavy bodies, and of 2.68 for the gangue, we obtain 23.08 per cent. total barysomes (comprising the corundum and the magnetite only) in the rock. This result is approximately in accord with the percentage arrived at by mechanical concentration, the total concentrates in Test A being 18.987 per cent. and in Test B 22.63 per cent. of the rock treated, it being estimated that the concentrates in Test A contain 87.56 per cent. of corundum and magnetite, or 16.60 per cent. of the total rock treated, and that those in Test B contain 89.23 per cent. of corundum and magnetite, or 20.14 per cent. of the total rock treated. Considering that there has inevitably been some loss in the tailings, it would seem that the calculated percentage of total barysomes, although probably somewhat too high, is somewhere near the truth, which would give about 18.44 per cent. of corundum in the rock. This, it must be borne in mind, is only an approximate estimate. It has been proved however by Test A that it is possible to recover corundum to the extent of 12.74 per cent. of the rock treated, and by Test B to the extent of 15.50 per cent. Taking the maximum extraction, this would indicate a loss of 15.94 per cent. of the total corundum in the concentration. On the other hand the average specific gravity of the tailings in Test A is 2.742, which would show, on the same basis for calculation, only 0.756 per cent. barysomes lost. In Test B the average specific gravity of the tailings is 2.726, equivalent to 0.514 per cent. barysomes lost. It should be stated that the figure 2.68 for the specific gravity of barren tailings was arrived at by taking the average of the leanest tailings obtained in actual concentration. Since

Specific gravity method for determining grade of corundum rock.

the bulk of the gangue is orthoclase felspar, with considerable white felspar and nepheline, and less quantities of basic silicates, this result appears rational. Furthermore, careful examination of the tailings with a magnifying glass revealed an insignificant number of grains of corundum, save in some of the tailings from the buddle.

The percentage of corundum in the rock treated in Test A, as near as can be estimated, is 12.74 per cent., and in the rock treated in Test B it is 15.50 per cent. The lots of corundum rock upon which these determinations were made came from Carlow township in Hastings county. The specific gravity method was used in making these estimates, but, after elimination of the magnetite, this method can be relied upon to give nearly accurate results, consistent among themselves, and checking up closely with the results obtained by chemical analysis.

The Lines of Treatment

The crushing tests show that the corundum rock offers no peculiar difficulties in this respect. From plates I, II and III it appears that the crushing curve is perfectly normal, and in plate I it is shown that the curve is elevated, with no excessive production of fines, by successive crushing to smaller sizes. It was found that in order to liberate a sufficient quantity of corundum grains sufficiently free from gangue to admit of economical clean concentration it was necessary to crush to No. 8 mesh size (=0.0955 inch diameter). But the specific gravity curve (plate II) shows that the barysomes resist crushing so much more persistently than the gangue that it would appear to be desirable to crush no finer than $\frac{3}{8}$-inch for a preliminary rough jigging. An attempt has been made to obtain distribution curves of the corundum and magnetite corresponding to the various sizes (plate II), which is approximately correct for the magnetite, but evidently in error for the corundum, owing to the difficulties with the specific gravity method already explained. The magnetite, being carefully separated from each grade by the magnet, was not involved in the same uncertainty.

Distribution curves in crushing tests of corundum and magnetic.

The corundum has a tendency to break in the form of tabular plates, so that a considerable percentage of the grains, notably in the larger sizes, have one diameter less than that aimed at in crushing. This peculiarity was particularly marked in the corundum rock from Renfrew county, Brudenell township. This tendency fortunately is much less in the finer sizes. The crushing curve of the Brudenell rock is shown in plate III. No further tests have so far been made upon this sample.

It need hardly be pointed out that any machine crushing by grinding or shearing would be wholly unsuited to the comminution of the corundum rock, the wear and tear upon the machine itself being sufficiently prohibitive without taking into consideration the undesirableness of the resultant product for concentration. Some form of jaw or gyratory crusher for coarse breaking, and high speed rolls with chrome steel or manganese steel tires for finer crushing, are the proper appliances.

Practical Concentration.

The specific gravity curve (plate II) shows the desirability of separating the coarse from the fine product in order to derive the high grade concentrates with a minimum of labor from the coarser sizes. These concentrates moreover will contain a minimum quantity of magnetite. This separation was carried out both in Test A and Test B. In the former the rock was crushed to $\frac{1}{4}$-inch before concentration was begun. In the latter, after crushing to $\frac{3}{8}$-inch, it was screened over a 20 mesh sloping screen. It would have been far better to have screened it through a trommel, using a No. 8 mesh wire cloth, but a trommel was not available for the purpose. The results were so much better in Test B that the advantage of the method therein pursued is obvious, so far as the obtaining of a high grade of concentrates is concerned.

To obtain high grade concentrates.

The line of treatment followed in the two tests is better shown in the accompanying charts (plates IV and V) than would be possible by a detailed description. The machines employed were the common Hartz eccentric jig, the Frue vanner,

Machines employed.

the vertical line separator (an improved form of spitzlutte), a fixed buddle, and a Wetherill magnetic concentrator.

Appliances used in Test A.

In Test A the appliance chiefly used for high class work was the vertical line separator. Plate VI demonstrates to some extent its possibilities, but it is evident that much better work could have been obtained with it. The difficulty of judging by the eye as to the cleanness of the concentrates led to errors which could only be revealed by the subsequent determination of the specific gravities of the products. The fact that on one grade, containing material between No. 12 and No. 16 mesh, a product was obtained carrying 98.40 per cent. corundum after elimination of the magnetite, with corresponding tailings having a specific gravity of 2.816, is evidence of the possibility of securing rich concentrates with this simple and inexpensive appliance. The results are more clearly shown in tabular form :

Product.	lb.	sp. g.	Per cent. corundum after removing magnetite.
Tailings	43.456	2 816	.....
Spigot discharge.	5.0625	3.864	98.40

Resort was had to the jig however for the treatment of one grade of material in Test A, in which its higher efficiency stands out prominently, as shown below :

not possible in this respect, since the ragging is not a finished product, but it will be observed that the specific gravity of the jig tailings is 2.695, appreciably lower than that of the tailings from the vertical line separator. The vertical line separator was used on three grades of material in Test B from necessity, since the quantities of the intermediate products on which it was employed were too small for treatment on the jig. There is no doubt however that in practice similar products should be cleaned up on a fine jig, which would give a correspondingly higher grade of finished corundum concentrates. The average specific gravity of the concentrates (including magnetite) from the vertical line separator in Test B was 3.333, and of the tailings 2.783. The results, compared with those obtained with the jig, are shown in the table on next page.

Inspection of this table will show how much more efficient the jig is for the work in hand, a result in entire conformity with what might have been anticipated.

Concentration by the Frue vanner and the buddle.

The work done by the Frue vanner was unsatisfactory. Better results could undoubtedly have been secured by classification of the material fed to it, but in any case its capacity would be too small to warrant its use. With the utmost care the best concentrates that could be obtained showed a specific gravity of only 3.4, with corresponding tailings having a specific gravity of 2.702. The concentration on the buddle in Test A gave

Product.	lb.	sp. g.	Per cent. Corundum after removing Magnetite.
Hutchwork, high grade concentrates.....	22.625	4.000	98.08
Screen discharge, high grade concentrates	15.750	3.663	87.80
Ragging, low grade concentrates	25.3125	2.809	21.41
Tailings, barren	131.258	2.695	.....

The vertical line separator and the Hartz jig.

The vertical line separator was employed in Test A upon six grades of stuff, the average ratio of concentrates to tailings being as 1: 5.89. The average specific gravity of the concentrates (including magnetite) was 3.557, and of the tailings 2.703. A comparison with the jig is

concentrates with an average specific gravity of 3 699 and tailings with a specific gravity of 2.875. This is also unsatisfactory, but the material was unclassified, and contained a considerable percentage too coarse for this appliance. The buddle used, moreover, was far from perfect, and was capable of giving

Results of concentration with vertical line separator and Hartz jig.

Appliance used.	Products.	lb.	sp. g.	Per cent. Corundum after removing Magnetite.
Vertical line separator.	Concentrates No. 12 mesh.....	21.969	3.350	75.08
	Tailings " 12 "	6.688	2.828	
	Concentrates " 16 "	18.75	3.436	69.12
	Tailings " 16 "	11.344	2.809	
	Concentrates " 20 "	5.25	3.533	73.38
	Tailings " 20 "	3.625	2.814	
	Concentrates " 24 "	3.625	3.571	83.20
	Tailings " 24 "	3.000	2.832	
	Concentrates " 30 "	3.698	3.571	73.37
	Tailings " 30 "	2.313	2.777	
	Concentrates " 40 "	2.724	3.521	67.41
	Tailings " 40 "	1.875	2.824	
	Concentrates " 24 "	5.000	2.904	82.75[30]
	Tailings " 24 "	4.000	2.754	
	Concentrates " 30 "	23.000	2.816	77.64
	Tailings " 30 "	22.000	2.777	
	Concentrates " 40 "	1.906	3.125	42.70
	Tailings " 40 "	36.000	2.749	
	Concentrates " 12 "	2.375	3.205	53.78
	Tailings " 12 "	0.844	2.777	
	Concentrates " 16 "	12.625	3.289	60.68
	Tailings " 16 "	7.000	2.801	
	Concentrates " 20 "	6.813	3.533	75.08
	Tailings " 20 "	5.000	2.762	
	Concentrates " 24 "	7.000	3.703	75.93
	Tailings " 24 "	5.500	2.762	
	Concentrates " 30 "	7.094	3.773	77.64
	Tailings " 30 "	5.875	2.762	
	Concentrates " 40 "	6.594	3.876	75.08
	Tailings " 40 "	5.813	2.816	
	Average of all concentrates	129.923	3.333	62.31
	Average of all tailings	127.765	2.783	
Hartz jig...	Hutchwork (rough jigging)	244.	3.410	
	Ragging "	300.	2.857	
	Tailings "	265.	2.684	
	Hutchwork (1st middle jigging) .	13.	4.026	97.23
	Screen discharge " .	63.5	4.053	93.82
	Ragging " .	102.	3.144	
	Tailings " .	51.5	2.737	Sized after concentration.[31]
	Hutchwork (2nd middle jigging).	15.	4.048	a. 77.19% 1.86 lb. b. 100.00% 2.125 " c. 96.38% 1.219 " Emery 3.68 "
	Screen discharge " .	18.5	3.759	90.42
	Ragging " .	26.	2.958	
	Tailings " .	140.	2.688	Sized after concentration.
	Hutchwork (3rd middle jigging).	23.	4.083	a. 98.08% 7.625 lb. b. 80.19% 2.875 " Emery 1.39 "
	Screen discharge " .	40.	3.610	89.51
	Ragging " .	35.	2.941	
	Tailings " .	277.	2.713	
	Average of all concentrates, including ragging	880.	3.257	
	Average of all tailings	733.5	2.699	

[30] This case may seem anomalous. It is however an instance in which magnetite was adherent to felspar grains, causing them to follow the corundum grains in concentration. These being eliminated by the magnetic separator leave a residual corundum of high enrichment.

[31] Lack of correspondence between the weights of the original concentrates and the residual corundum is due to decrease from elimination of the magnetite after concentration.

only two products, heads and tailings. Considering these disadvantages its work appears less discreditable, and shows that under proper conditions it would yield high grade concentrates.

Mica and Magnetite.

Treatment to eliminate mica and magnetite.

The treatment of any slimes from this corundum rock is complicated by the presence of large quantities of white mica (muscovite). Since the corundum has a tendency to break in a more or less tabular form, its separation from the mica is exceedingly difficult. The magnetite, on the other hand, breaks into grains of average shape, which for purposes of concentration may be regarded as approximately spherical. Hence it is evident that, in the treatment of these slimes on any form of contact-surface concentrator, an appliance should be used which will give heads, middlings and tailings. The heads would then be practically free from mica, and would contain the bulk of the magnetite and the more nearly rounded grains of corundum. The resultant corundum would be a superior abrasive. The middlings would require further treatment, and would produce a grade of corundum which should probably be further comminuted and separated into fine grades by blowing into a dust tower. The proper appliances then would manifestly be the side-bump table (improved Rittinger percussion table) and the buddle, using the spitzkasten for previous classification of the slimes.

Table showing enrichment of corundum concentrates by elimination of gangue adherent to magnetite.

Products.	Concentrator used.	Diameter of grains, in.	Specific gravity.
Original concentrates	Hartz jig	.0955 to .0148	3.610
Non-magnetic portion		.0955 to .0148	3.724
Magnetic portion		.0955 to .0148	3.584
Original concentrates	Vertical line separator	.073 to .0583	3.350
Non-magnetic portion		.073 to .0583	3.508
Magnetic portion		.073 to .0583	3.257
Original concentrates	Vertical line separator	.0583 to .042	3.424
Non-magnetic portion		.0583 to .042	3.436
Magnetic portion		.0583 to .042	3.360
Original concentrates	Vertical line separator	.073 to .0583	3.205
Non-magnetic portion		.073 to .0583	3.223
Magnetic portion		.073 to .0583	3.174
Original concentrates	Vertical line separator	.0583 to .042	3.289
Non-magnetic portion		.0583 to .042	3.311
Magnetic portion		.0583 to .042	3.174

The Wetherill magnetic concentrator has proven of the highest possible value in eliminating the magnetic material from the concentrates. It is capable of exceedingly delicate adjustment, and yet mechanically is of extreme simplicity. It has the advantage of lifting the magnetic particles clear of the non-magnetic, so that the formation of "nests," with the consequent inclusion of non-magnetic particles with the magnetic heads, is avoided. The only loss of corundum in the magnetic heads was due to the adherence of some magnetite to corundum grains. In the finer grades however it was found necessary to resort to sizing, in order to insure a corundum product free from magnetite. A feature of peculiar importance in this machine is that by varying the amperage a neat separation may be effected between iron-bearing minerals of widely different degrees of magnetic attractability. The practical application of this feature in cleaning up the corundum concentrates occurs in the finishing treatment of the highest grade material. The concentrates are first passed through the Wetherill magnetic separator with the current adjusted to 0.9 ampère. This eliminates all the magnetite. The non-magnetic residue containing the corundum is then again passed through the Wetherill machine, using a current of higher amperage. In our experiments 15 to 16 ampéres were found to be sufficient. The magnetic product in this case consists of

The Wetherill Magnetic Concentrator.

corundum containing small percentages of iron, associated with some very basic silicates. This product is practically an emery of rather superior grade, and is valuable as an inferior abrasive. The residual corundum after this final treatment is of great purity, containing according to analyses by Dr. W. L. Goodwin about 0.38 per cent. of ferric oxide.

Purity of the Concentrates.

The increase in the purity of the final corundum concentrates by the elimination of gangue adherent to magnetite is shown in the table on page 244.

Table showing effect of fineness of size upon grade of magnetite eliminated.

Products.	Concentrator used.	Diameter of grains, in.	Specific gravity.
Original concentrates	Vertical line separator .	.073 to .0583	3.205
Non-magnetic portion....	....	.073 to .0583	3.223
Magnetic portion	....	.073 to .0583	3.174
Original concentrates	Vertical line separator.	.0583 to .042	3.289
Non-magnetic portion....	....	.0583 to .042	3.311
Magnetic portion.....	.....	.0583 to .042	3.174
Original concentrates	Vertical line separator.	.042 to .0335	3.533
Non-magnet'c portion....	....	.042 to .0335	3.508
Magnetic portion	....	.042 to .0335	3.633
Original concentrates	Vertical line separator .	.0335 to .0278	3.703
Non-magnetic portion....	.....	.0335 to .0278	3.521
Magnetic portion	....	.0335 to .0278	4.000
Original concentrates	Vertical line separator.	.0279 to .0211	3.773
Non-magnetic portion....	....	.0279 to .0211	3.546
Magnetic portion.....	.....	.0279 to .0211	4.273
Original concentrates	Vertical line separrtor .	.0211 to .0148	3.876
Non-magnetic portion....	....	.0211 to .0148	3 508
Magnetic portion.....	....	.0211 to .0148	4.762
Original concentrates	Buddle.....	.0148 to finest slimes....	3.703
Non-magnetic portion....	... .	.0148 "	3.389
Magnetic portion.....	.....	.0148 "	5.076
Original concentrates	Vertical line separator .	.073 to .0583	3.350
Non-magnetic portion....	.....	.073 to .0583	3.508
Magnetic portion.....	.....	.073 to .0583	3.257
Original concentrates	Vertical line separator.	.0583 to .042	3.424
Non-magnetic portion....	.....	.0583 to .042	3.436
Magnetic portion.....	....	.0583 to .042	3.360
Original concentrates	Vertical line separator.	.042 to .0335	3.533
Non-magnetic portion....	.....	.042 to .0335	3.484
Magnetic portion..... ..	....	.042 to .0335	3.571
Original concentrates	Vertical line separator.	.0335 to .0279	3.636
Non-magnetic portion....	.....	.0335 to .0279	3.571
Magnetic portion	....	.0335 to .0279	3.956
Original concentrates	Vertical line separator.	.0279 to .0211	3.571
Non-magnetic portion....	.....	0279 to .0211	3.484
Magnetic portion.....	.....	.0279 to .0211	3.731
Original concentrates	Vertical line separator .	.0211 to .0148	3.521
Non-magnetic portion....	....	.0211 to .0148	3.401
Magnetic portion.....	.....	.0211 to .0148	4.545
Original concentrates	Buddle	.0148 to finest slimes....	3.921
Non-magnetic portion....	... ...	.0148 "	3.663
Magoetic portion.....	.....	.0148 "	5.025

It is evident that the elimination of a pure magnetite requires reduction of the material to grains having a maximum diameter of

about .01475 in. (No. 40 mesh), the increase in the specific gravity of the magnetic heads conforming quite closely to the decrease in the diameter of the particles up to this point, where in the majority of cases the specific gravity was approximately that of pure magnetite. The magnetic heads from the finer sizes were perfectly black, revealing no adherent quartz or felspar, although there is in some of these products a very small quantity of adherent basic silicates, which are apparently the cause of the lower specific gravity in those instances. (See table on p. 246). The magnetite should prove a valuable by-product, the amount present in the corundum rock being approximately 4.64 per cent. of the total. Analyses have shown that it contains 0.03 per cent. of sulphur, no trace even of phosphorus, and 69.09 per cent. of metallic iron.

Value of fine crushing.

The coarser sizes of magnetic heads eliminated by the magnetic separator require further crushing, after which they can be returned to one of the final concentrating processes, whereby the corundum they contain will be recovered, and the magnetite itself will be obtained with the finer sizes in a marketable condition. It has been found by our tests that the magnetic heads coarser than No. 40 mesh eliminated, carry with them 6.77 per cent. of corundum.

Treatment of the coarser sizes.

Test A in Brief.

The original lot of corundum rock taken was 550 lb. The total products recovered amounted to 517.9679 lb., the missing 32.0321 lb. being due mainly to samples abstracted, and partly to loss in manipulation. The products recovered are distributed as follows :

Products won in the test.

Clean corundum concentrates.	77.1009 lb.
Magnetic heads	20.0115 "
Emery	1.4350 "
Tailings	419.4205 "

Being a total of 517.9679 lb. The percentages are :

Clean corundum concentrates	14.885
Magnetic heads	3.825
Emery	0 277
Total concentrates	18 987
Tailings	81.013
Total corundum recovered from rock.	12.74

The grades of corundum concentrates in percentages are :

Above 95 per cent. pure	36.790
Between 85 and 90 per cent. pure	21.279
Between 80 and 85 per cent. pure	2.461
Below 80 per cent. pure	39.470

The average of all corundum concentrates shows them to contain 84.11 per cent. corundum.

The calculated loss of corundum and magnetite in tailings is 0.756 per cent. (sp. g. 2.742). On the basis of the average specific gravity of the original rock the loss would be 15.94 per cent., but this result is subject to far more likelihood of serious error than that obtained from the average specific gravity of the tailings, since this was reached by averaging a very large number of separate determinations. Furthermore, examination with a lens fails to reveal corundum in the tailings.[32]

Loss in the A test.

Test B in Brief.

The original lot of corundum rock taken was 1,250 lb. The total products recovered amounted to 1199.8438 lb., or say 1,200 lb., the loss being due to the same causes as those mentioned in test A. The products recovered are distributed as follows :

Products won in the test.

Clean corundum concentrates	201.60 lb.
Magnetic heads	64 93 "
Emery	5.07 "
Tailings	928.40 "

Being a total of 1200 lb. The percentages are :

Clean corundum concentrates	16.80
Magnetic heads	5.4075
Emery	0.4225
Total concentrates	22.63
Tailings	77.37
Total corundum recovered from rock	15.50

The grades of corundum concentrates in percentages are :

Above 95 per cent. pure	14.76
Between 90 and 95 per cent. pure	37.06
Between 85 and 90 per cent. pure	18.71
Between 80 and 85 per cent. pure	3.14
Between 75 and 80 per cent. pure	9.74
Below 75 per cent. pure	16.59

[32] In a mineralogical examination of the tailings, made by Prof. William Nicol, of the School of Mining, a sample containing by actual count 3,234 separate grains, carried only 26 grains consisting wholly or in part of corundum.

The average of all corundum concentrates shows them to contain 90.08 per cent. corundum.

Loss in the test.

The loss of corundum and magnetite in tailings calculated from the specific gravity is 0.514 per cent. Calculated on the basis of the average specific gravity of the original rock, the loss would be 15.94 per cent., but the latter result is undoubtedly in far more serious error than the former, as previously stated.

Quality of the Corundum.

Physical tests necessary to prove value.

It is impossible to determine the quality of corundum for abrasive purposes by its appearance, or by chemical tests. For this purpose it is necessary to manufacture corundum wheels from the concentrates obtained, and subject these to various physical tests. This remains to be done and will then be made the subject of a later communication. Since many corundum wheels are made by a fritting or vitrifying process, the corundum being mixed with fusible clays, moulded, dried, dressed, and fired in kilns, the resistance of the corundum to alteration under the influence of long continued high temperature is of importance, and an effort was made to ascertain the quality of the Hastings corundum in this respect. It was impossible with the means at our command to make a satisfactory firing test, since the time of firing was too brief, but the results are given for what they may be worth. Thirty grams of selected corundum, specific gravity 3.91, were placed in a clay crucible, with cover tightly fitted inside the crucible mouth. This was placed inside a second crucible, with sand packing between the two, and with a cover tightly fitted inside the mouth of the outer crucible. This was put into a muffle, heated by gas, the temperature gradually raised for four hours, charcoal then being fed regularly into the muffle to raise the temperature nearly to white heat. This was continued for eight hours. The gas was then turned off, the muffle closed, and allowed to cool over night. The corundum was found to be slightly paler in color after this treatment, with a tendency to reveal the parting planes more clearly to the eye, but the hardness seemed to be unimpaired. The specific gravity of the fired corundum was found to be reduced to 3.846. Although by no means conclusive, this experiment raises a question as to whether this corundum will prove to be adapted for the manufacture of wheels by the fritting process, which can be proven most satisfactorily by a practical test, the firing being done under proper conditions in a kiln.

An Ore of Aluminum.

Requirements of the aluminium makers.

The market for corundum is not a large one, and it would not be difficult for extensive works to supply the world's demand. Hence any widening of the application of this mineral would be welcome. If it can be produced sufficiently pure, and subsequently reduced to a sufficiently fine state of subdivision, it could be used as an ore of aluminium. The standard required by the aluminium manufacturers is stated to be that the alumina shall contain not more than 0.10 per cent. silica and not more than 0.05 per cent. ferric oxide. Such alumina is ready for the reduction pots, and is worth at present about 4½ cents per pound at Pittsburgh, Pa., or at Niagara Falls, N.Y. The standard for raw alumina, previous to purification, requires that it shall contain not more than three per cent. silica nor more than two per cent. ferric oxide, but this is worth only $7 per ton, a price too low to admit of competition by corundum from deposits of no greater richness than 15 per cent. of that mineral.

The excessive refinement of portions of the process of treatment employed in our concentration tests on the corundum rock was in part for the purpose of producing, if possible, a grade of sufficient purity to meet the requirements of the aluminium makers. We succeeded in obtaining a product carrying over 99 per cent. of corundum. Analysis shows that this contains 0.4 per cent. silica and 0.39 per cent. ferric oxide. Grains of corundum selected from these high grade concentrates with the aid of a lens to insure freedom from adherent silicates showed 0.07 per cent. silica and 0.36 per cent. ferric oxide. From this result it would seem that if the standard of the aluminium manufacturers remains as it now is, the corundum

must undergo a process of purification before it can be offered in competition with purified bauxite. Whether such purification can be accomplished within commercial limits of cost, is a question still being investigated in our laboratories. Further efforts are also being made to obtain a purer quality of corundum by mechanical means. The reduction to a sufficiently fine powder, judging by some preliminary tests promises to offer no serious difficulty.

Preparation for Market

At the present time corundum users are content to obtain concentrates carrying about 80 per cent. of that mineral. By the application of ordinary concentration methods it has been shown that grades can be obtained which carry practically no impurities, except such as may exist in the corundum grains themselves. A modern concentration plant, under efficient management, following the lines suggested at the end of this paper, would produce no concentrates of lower grade than 80 per cent. It would accordingly be possible to obtain different qualities of concentrates from 80 per cent. to nearly pure corundum. As produced in concentration, these would vary in size from No. 4 mesh (=0.201-inch) to finest slimes. The finer sizes however would be less pure than some of the coarser and most of the intermediate sizes. These moreover would require exact sizing in order to be acceptable for the manufacture of corundum wheels and artificial oilstones. The coarser sizes as produced in concentration might require re-crushing after concentration, and thus the finer sizes of very pure corundum could be obtained. The dust should be drawn off by an exhauster and blower, the "flours" and grades known as "crocus" being obtained by deposition from the air current on shelves in a dust tower, in accordance with present practice in some corundum mills.

Production of various grades.

Schemes of Treatment.

In a general way it may be indicated that in the treatment of rock similar to that experimented upon at the School of Mining any of the three following lines of treatment would give good results. The first could be relied upon to produce concentrates having on an average above 90 per cent. of corundum. The second would be slightly inferior to it, but is considerably more simple. The third is also a simple process, and should yield concentrates containing on an average 85 per cent. of corundum, or even more. It has been assumed in these schemes that the concentrates in the several hutches of each jig should be combined as one grade. This would be inadmissible if it were desired to produce one very clean grade of corundum for aluminium manufacture. It is questionable whether there would be a demand for such a pure-grade material as an abrasive at a price sufficiently high to warrant the complication of the treatment needed to obtain it. The methods herein suggested could be still further simplified and yet yield equally high grade or even higher average grade concentrates, but at the expense of a greater loss of corundum in the tailings. The question of the proper line of treatment is one that must be decided in each individual case, and will depend upon a multitude of economical considerations. The plans proposed accordingly are not intended to be taken as necessarily the best under the conditions that may arise where these corundum deposits may be worked. They are merely offered as outlines of methods, which, under sufficiently favorable conditions as to fuel and water supply, and as to transportation costs, could be counted upon to yield satisfactory results under competent mill superintendence.

Three schemes and their resulting products.

SCHEME A.

1. Rock breaker. Product to No. 2 size.
2. Grizzly, $\frac{3}{8}$-inch. ... a. Oversize : to 3. b. Undersize : to 4.
3. Rolls set to $\frac{3}{8}$-inch. to 4.
4. Trommel, 0.1 inch. c. Oversize : to 5. d. Undersize : to 10.
5. "Roughing" Jig. e. Hutchwork : to 6. f. Ragging : to 9. g. Tailings : waste.
6. Rolls for rich corundum, $\frac{1}{16}$-inch : to 7.
7. Single-spigot hydraulic classifier. h. Overflow : to 12. i. Spigot : to 8.
8. "Middling" Jig. j. Hutchwork : to 17. k. Screen discharge : to 21. l. Ragging : to 9. m. Tailings : waste.
9. Fine Rolls. To 10.
10. Single-spigot hydraulic classifier. n. Overflow : to 12 o. Spigot : to 11.
11. Jig ... p. Hutchwork : to 17. q. Ragging : to 9. r. Tailings : waste.

12. Spitzkasten...
- s. 1st compartment: to 11.
- t. 2nd " to 13.
- u. 3rd " to 15.
- v. 4th " to 15.
- w. Overflow: waste.

13. Percussion table ..
- x. Heads: to 21.
- y. Middlings: to 14.
- z. Tailings: waste.

14. Finishing percussion table .....
- aa. Heads: to 24.
- bb. Tailings: waste.

15. Buddle .....
- cc. Heads: to 21.
- dd. Middlings: to 16.
- ee. Tailings: waste.

16. Finishing buddle..
- ff. Heads: to 24.
- gg. Tailings: waste.

17. Dryer: to 18.
18. Sizing screens: to 19.
19. Magnetic separator. 1 ampére.
- hh. Magnetic heads: to 27.
- ii. Corundum: to 20.

20. Magnetic separator. 16 ampéres.
- jj. Emery.
- kk. Corundum.

21. Dryer: to 22.
22. Sizing screens: to 23.
23. Magnetic separator. 1 ampère.
- ll. Magnetic heads: to 27.
- mm. Corundum.

24. Dryer: to 25.
25. Sizing screens: to 26.
26. Magnetic separator. 1 ampère.
- nn. Magnetite.
- oo. Corundum.

27. Magnetite rolls: to 28.
28. Spitzkasten.
- pp. 1st compartment: to 14.
- qq. 2nd " to 16.
- rr. 3rd " waste.
- ss. Overflow; "

SCHEME B.

1. Rock breaker. Product to No. 2 size.
2. Grizzly, ⅝-inch.
- a. Oversize: to 3.
- b. Undersize: to 4.

3. Rolls, set to ⅜-inch: to 4.
4. Trommel (series).
- c. Oversize: to 5.
- d. Middlings: to 7.
- e. Fines: to 10.

5. "Roughing" jig.
- f. Hutchwork: to 6.
- g. Ragging: to 6.
- h. Tailings: waste.

6. Rolls: to 7.
7. Screens or trommels. 5 sizes: products to 8.
8. Battery of vertical line separators.
- i. Spigots: to 15.
- j. Tailings: to 9.

9. Fine rolls: to 10.
10. Spitzkasten.
- k. 1st compartment: to 11.
- l. 2nd " to 12.
- m. 3rd " to 13.
- n. 4th " to 13.
- o. Overflow: waste.

11. Jig.
- p. Hutchwork: to 15.
- q. Ragging: to 9.
- r. Tailings: waste.

12. Jig.
- s. Hutchwork: to 18.
- t. Tailings: waste.

13. Buddle.
- u. Heads: to 18.
- v. Middlings: to 14.
- w. Tailings: waste.

14. Finishing buddle.
- x. Heads: to 18.
- y. Tailings: waste.

15. Dryer: to 16.
16. Sizing screens: to 17.
17. Magnetic separator.
- z. Magnetic heads: to 21.
- aa. Corundum.

18. Dryer: to 19.
19. Sizing screens: to 20.
20. Magnetic separator.
- bb. Magnetite.
- cc. Corundum.

21. Magnetite rolls: to 22.

22. Spitzkasten.
- dd. 1st compartment: to 12.
- ee. 2nd " to 14.
- ff. 3rd " to 14.
- gg. Overflow: waste.

SCHEME C.

1. Rock breaker: product to No. 2 size.
2. Grizzly.
- a. Oversize: to 3.
- b. Undersize: to 5.

3. Rolls set out to 0.1-inch: to 4.
4. Trommel.
- c. Oversize: back to 3.
- d. Undersize: to 5.

5. Hydraulic classifier.
- e. 1st Spigot: to 6.
- f. 2nd " to 7.
- g. 3rd " to 8.
- h. 4th " to 8.
- i. Overflow: to 10.

6. Jig.
- j. Hutchwork: to 14.
- k. Ragging: to 9.
- l. Tailings: waste.

7. Jig.
- m. Hutchwork: to 14.
- n. Ragging: to 9.
- o. Tailings: waste.

8. Jig.
- p. Hutchwork: to 14.
- q. Ragging: to 9.
- r. Tailings: waste.

9. Fine rolls: to 10.
10. Spitzkasten.
- s. 1st compartment: to 11.
- t. 2nd " to 12.
- u. 3rd " to 13.
- v. 4th " to 13.
- w. Overflow: waste.

11. Fine jig.
- x. Hutchwork: to 17.
- y. Tailings: waste.

12. Buddle.
- z. Heads: to 17.
- aa. Middlings: to 13.
- bb. Tailings: waste.

13. Finishing buddle.
- cc. Heads: to 17.
- dd. Tailings: waste.

14. Dryer: to 15.
15. Sizing screens: to 16.
16. Magnetic separator.
- ee. Magnetic heads: to 20.
- ff. Corundum.

17. Dryer: to 18.
18. Sizing screens: to 19.
19. Magnetic separator.
- gg. Magnetite.
- hh. Corundum.

20. Magnetite rolls: to 10.

Production and Prices.

United States Statistics.

The production of corundum in the United States in 1897 is estimated by the Engineering and Mining Journal of New York as being 230 short tons, and of emery 1,500 tons. This applies to finished products, obtained for the most part, if not wholly, by washing by the so-called "mulling process." (See article on Corundum by C. N. Jenks in Rothwell's Mineral Industry, vol. V, 1896, for description of this process.) The price of the corundum was $140 per ton, and of the emery $70 per ton. The output of American corundum and emery concentrates in 1895 and 1896 is shown below, as reported in Rothwell's Mineral Industry, vol. V.

All of the corundum used in America is of American production. The imports of emery into the United States for 1895 were, emery grains, 678,761 lb., $25,066; emery rock, 6,803 long tons, $80,386; manufactured emery, $27,586; total value, $133,038. In 1896 the imports were, grains, 755,693 lb., $28,493; rock, 6,389 long tons, $119,738; total value, $148,231.

Emery.

These are the latest quotations available from printed sources. It thus appears that the market price of corundum rules steady at seven cents per pound, and of emery at three and a half cents per pound. From the conditions under which the Hastings County corundum is found it may be stated that the cost of mining, on a sufficiently large scale, should apparently not exceed $1 per ton. The cost of milling should be considerable less than $1 per ton of the crude rock. Taking the average percentage found by practical concentration, viz., 14.67 per cent., this would yield 293.4 lb. of corundum per ton. It is evident that the corundum could be mined and milled at a cost so low as not only to compete easily with the present output of that article, but could compete successfully with emery, even if the price of emery should be reduced. To do this however preparations should be made to handle quantities of not less than 100 tons of rock daily. Small plants would work at a disadvantage that might lead to financial disaster. Practical tests of wheels made from this corundum, and a thorough investigation into the world's market must be made, as a preliminary to any consideration of operating mines and mills on the Ontario deposits. The tests of the manufactured product will be reported upon later.

Estimates of producing cost in the Ontario field

	1895.			1896.		
	Tons.	Value.	Price per ton.	Tons.	Value.	Price per ton
		$	$		$	$
Corundum	385	53,900	140	400	56,000	140
Emery	1,700	119,000	70	1,550	108,500	70

In conclusion I desire to commend the intelligence and zeal of my assistant, Mr. Charles G. Rothwell, to whose excellent work is due a very considerable part of the practical results of the tests made. I wish also to express my indebtedness to Mr. N. R. Carmichael, M.A., for valuable assistance in connection with the electrical work.

Water Powers of Ontario

By Thomas W. Gibson

IN speaking at Buffalo, N.Y., January 12, 1897, on the occasion of the introduction into that city of electric power from Niagara Falls, Mr. Nikola Tesla, perhaps the most celebrated of living electricians, spoke of a tremendous problem yet to be solved in the production of power, to the elucidation of which he had devoted a great deal of attention. Without describing the nature of this problem, he spoke of it as an effort to "evolve means for obtaining energy from stores which are forever inexhaustible, to perfect methods which do not imply consumption and waste of any material whatever." Even if this stupendous achievement were accomplished however, (as he had little doubt it would be), he said his investigations led him to conclude that "under the theoretically best conditions such a method of obtaining power cannot equal in economy, simplicity and many other features the present method involving a conversion of the mechanical energy of running water into electrical energy, and the transmission of the latter in the form of currents of very high tension to great distances. Provided therefore that we can avail ourselves of currents of sufficiently high tension, a waterfall affords us the most advantageous means of getting power from the sun sufficient for all our wants, and this recognition has impressed me strongly with the future importance of the water power, not so much of its commercial value, though it may be very great, but chiefly of its bearing upon our safety and welfare." [1]

The most advantageous means of getting power.

An Extensive Region favorable for Water Power.

If Mr. Tesla's conclusion be correct, namely, that a waterfall affords us the most advantageous means of getting power from the sun for all our wants, excelling for this purpose not only muscular force, but wind and steam as well, the rocky uplands of northern and western Ontario may yet be reckoned among the most valuable parts of the Province by reason of the vast number of waterfalls situated there. The main watershed dividing the system of the great lakes from that of Hudson bay runs in a northwesterly direction from the eastern boundary of the Province north of lake Temiscamingue to the head of lake St. Joseph on the northern boundary, a distance of about 500 miles. It consists of a tableland or plateau rather than a sharply defined ridge, and is estimated to have an average width of about 70 miles, or an area of about 35,000 square miles, thus with the slopes on both sides affording an extensive catchment surface for the streams running to the north and south. Its elevation will average perhaps 1,400 or 1,500 feet above the level of the sea, or 900 feet above lakes Huron and Superior. In places it approaches the shore of the latter lake, and for the greater part of its extent is situated at a comparatively short distance from either of these bodies of water. The consequence is that the rivers and streams which flow from it into the great lakes, though mostly of considerable volume, are not of great length, and their descent is therefore usually rapid and abrupt, and marked in many places by cascades and falls.

Waterfalls of Northern Ontario.

The value of a river of given volume for purposes of water power does not altogether, or even chiefly, depend upon the amount of its fall from source to mouth. Of course the greater the fall the greater the energy possessed by the stream as a whole. But it is apparent that if the descent be gradual and uniform, or approximately so, there will be few places in its course where the fall is large enough to afford any considerable quantity of power. It is only where sudden falls or rapids occur, which create a decided difference in the level of the water, that the energy of the river is concentrated, as it were, within a short space, and can be utilized. The nature of the soil or surface of the country through which the

Favorable circumstances of the region.

[1] Cassier's Magazine, March, 1897, p. 385.

river runs has an important effect in influencing the habit of the stream in this respect, and so determining its value as a producer of power. If it be composed of sand, clay, gravel, or even the softer and more easily decomposed rocks, it will usually be found that the river has worn its bed to a fairly uniform slope throughout, in which case there will be few opportunities of developing power from its waters. Even if a slight drop should occur, a dam would probably be required in order to obtain any considerable head, and the erection of dams, while often necessary and advantageous, involves additional expense both in construction and maintenance. In a river whose bed is composed of hard rock, such as is usually comprised in the Laurentian and Huronian formations of northern and western Ontario, the eroding force of the water meets with much greater resistance, and its course is more likely to be marked by abrupt changes of level in rapids and falls, and indeed this is characteristic of many if not most of the rivers in those parts of the Province. Another prominent feature of the topography of these districts is the very large number of lakes, varying in size from mere ponds to large and important sheets of water. These are either the sources of or tributary to the rivers, or expansions of them, and act as reservoirs or storage basins, tending to regulate the flow of the water and to render it constant and steady throughout the year.

The character of the country in northern and western Ontario is therefore such as to provide an almost illimitable amount of water power readily available. Taking into account the annual precipitation of moisture in the form of rain and snow, there is no reason to doubt that hundreds of thousands of horse power could be generated from the waters of streams flowing into the great lakes with a minimum of trouble and expense. A shorter watershed running from the main one southwesterly round the western end of lake Superior divides the streams falling into that lake from those which find their way into lake Winnipeg and so into Hudson bay, and the waters running in both directions from this divide furnish many fine water privileges, similar in character and equally available; while tributary to the Ottawa river, and in that part of the Province included within the boundaries of Algonquin National Park, as well as to the south and west, are numerous rivers of considerable fall and volume, from which a very large additional amount of power could with little difficulty be obtained. The streams flowing into Hudson bay, such as the Albany, Kenogami, Missinaibi, Mattagami and Abitibi, are of greater average length than those running into the great lakes, and as they descend to the level of the sea, say 600 feet below that of lakes Superior and Huron, many falls are to be found upon them, particularly in their upper reaches and in the neighborhood of the "long portages," where their waters are interrupted by the hard rocks of the old formations on their way to the more level Devonian plains bordering on James bay. For the present however these rivers are too remote to be regarded as sources of available power, though the time may come when they will be called into requisition. But on the Seine, Atik-okan, Wabigoon, Winnipeg and Rainy rivers, on the Mattawin, Kaministiquia, Nipigon, Steel, Pic, Magpie and Michipicoten, on the Mississaga, Thessalon, Spanish, Vermilion, Wahnapitae and Sturgeon, on the Montreal, Ottawa, Petawawa, Bonnechere and Madawaska, on the Muskoka, Maganetawan and Severn, and on many others, there are numerous falls and rapids waiting to be utilized and capable of doing the work now being done by all the steam engines in Ontario a hundred or a thousand times over. This is leaving out of view the waterfalls already developed and in use in the older portions of the Province, as well as the stupendous energies of the falls of the St. Mary and Niagara rivers, which are already, one on the Canadian and the other on the American side, to some extent made use of.

Illimitable extent of available power.

Practical Uses of Power.

The rivers enumerated above are situated among the forests of pine and hardwood which cover so considerable a portion of New Ontario, and in many cases they are contiguous to valuable deposits of ore or mineral. The raw

Possible industries in Northern Ontario.

material for many industries lies around them. The sawmill, planing mill, sash and door factory, pulp mill, match factory and many other wood-working industries might happily combine abundant raw material and cheap power on these streams, while stamp mills and other mining plants might be worked with profit and success. Other industries, such as woollen, cotton and flour mills and chemical manufactories might avail themselves of the cheap power without necessarily locating in the immediate neighborhood of the waterfall, by connecting themselves with it by means of the electric current, though for textile, paper and other industries whose processes necessitate the use of large quantities of clear water, a waterfall convenient to means of transportation forms an ideal site. Electrically driven railways seem likely to come into vogue in this and other parts of the world because of their low first cost and inexpensive maintenance, and it appears feasible to operate electric roads by currents generated by the waterfalls on the rivers in many parts of the districts referred to. Such railways might serve a very useful purpose in carrying lumber, ore, raw and finished material and supplies of all kinds in a country where perhaps the volume of traffic might not be sufficient to render an ordinary steam railway a profitable undertaking.

Advantages of water power converted into electric energy.

Water power, whether employed directly to operate machinery, or converted into electric energy for the same purpose, has many advantages over the steam engine. For the same quantity of power, its first cost is not usually much greater, and often not so great, and once installed it requires little or no attention. Its danger to life and property is less. It needs no fuel, a consideration specially important in Ontario, which has no coal beds, and where in time even the present abundant supplies of wood will be exhausted. Hitherto the chief disadvantage of water power has been its immobility. If a waterfall was not conveniently situated, it was of little or no use. If it did not pay to place a manufactory along side a waterfall, the fall could not be brought to the factory. Now this has to a large extent been changed, and power can be delivered without serious waste many miles from where it is electrically produced. The change will be still more marked when the problem of transmitting electric energy through long distances has been thoroughly solved, and Nikola Tesla looks forward to a speedy solution.

The presence of so many available water powers in the Lake of the Woods, Seine River, Wahnapitae and other mining districts of Ontario is a fortunate circumstance, and cannot but have a very favorable effect upon their development. Cheap power means economy in working, and will permit of ore bodies being profitably utilized which would otherwise not pay for treatment. The immense deposits of low grade ore which are found north of lake Superior and on the Upper Seine are in many cases situated in proximity to waterfalls capable of yielding hundreds and thousands of horse power at comparatively little expense. The importance of preserving these water powers as far as possible for the general benefit and preventing their being locked up in the hands of speculative individuals who would not use them themselves, but who would demand heavy toll for their use by others, has led to the adoption of new regulations under the Act respecting Water Powers, (61 Vict., chap. 8) passed at the last session of the Legislature. The principal features of these regulations are those which provide for the leasing of such powers by the Crown, instead of patenting them outright, and for the furnishing of surplus power by the lessee to others on terms to be fixed in case of disagreement by the Lieutenant-Governor in Council. The full text of the Act, which was assented to January 17, 1898, and of the regulations, which were adopted by Order in Council dated June 21, 1898, is as follows:

An Act respecting Water Powers.

Reservation of water power on Crown Lands

Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows: The Commissioner of Crown Lands may reserve from sale any water power or privilege on the Crown Lands of the Province, and a sufficient area of land

in connection therewith for the erection of buildings and plant, together with the right to lay out and use such roads as may be necessary for passage to and from such water power or privilege and land, and may under regulations to be approved by the Lieutenant-Governor in Council make terms and conditions upon which such water power and land so reserved may be sold or leased, and developed.

REGULATIONS RE WATER POWERS.[1]

1. These rules and regulations shall not apply to water privileges which in their natural condition at the average low stage of water have not a greater capacity than 150 horse power.

Rules and Regulations.

2. In granting or leasing otherwise than under these regulations any Crown lands upon which a water privilege is situated, the said privilege shall be reserved to the Crown, together with such an area of land in connection therewith as shall in the opinion of the Commissioner of Crown Lands be required for the proper development of the same, and the construction of all necessary dams, weirs, tunnels, races, flumes, sluices, pits and other structures or works, and the erection of buildings and plant for the employment and utilization of such privilege, and storing grounds and yards in connection therewith ; and there shall also be reserved in any such grant or lease the right to flood any portion of the lands so granted or leased upon compensation to be made to the owner or lessee thereof by the person or persons to whom such privilege shall afterwards be leased ; and the said water privilege, land and right so reserved shall form a separate property to be dealt with as hereinafter provided.

3. The right to lay out and use such roads as may be necessary for the passage to and from such water privilege or land shall be reserved in all grants or leases of contiguous or adjoining lands.

4. The applicant for a water privilege situated on Crown lands shall, if necessary, file in the Department of Crown Lands a plan and field notes by an Ontario Land Surveyor of survey thereof ; and also a statement setting out :

(a) The location of the water privilege applied for, and a description of the land required in connection therewith.

(b) The height of the fall or rapid, the volume of water at the average high and low stages of same, the estimated capacity in horse power of the fall or rapid in its natural condition at the average low stage of water, the height of the dams or weirs (if any) which it is proposed to construct, and the increase in the level of the water which such dams or weirs will bring about.

(c) The nature and location of the business, plant or manufactory in connection with which it is proposed by the applicant to utilize the water privilege, and the number of horse power which the applicant proposes to develop and use (1) within two years, (2) within five years.

(d) The plan by which the applicant proposes to develop the water privilege, showing the dams, weirs, tunnels, races, flumes, sluices, pits and other structures or works which it is proposed to build or make in connection therewith, the estimated cost thereof, and the form in which the power is to be used or transmitted, that is, whether by direct energy, electricity, compressed air, etc.

(e) The land or lands which would be overflowed or otherwise affected by the raising of the water or the construction of the dams, weirs, sluices, races or other works in connection with the development or use of such water privilege and the owner or owners thereof.

5. The Commissioner of Crown Lands shall have power to call for measurements, plans, specifications, descriptions, levels, profiles, elevations and all such other information as he may deem necessary for the proper consideration of the application, which shall be furnished at the applicant's expense. The plans and specifications for the construction of the necessary dams, weirs, tunnels, races, flumes, sluices, pits and other works for the development of such water privilege shall be submitted to the Commissioner of Crown Lands, if so required by him, and such works shall not be proceeded with until the Com-

[1] An Order in Council approved by His Honor the Lieutenant-Governor, the 21st day of June, A.D. 1898.

missioner has approved the said plans and specifications.

6. The applicant shall submit such proof of his financial standing and ability to develop the said water privilege as shall be satisfactory to the Commissioner of Crown Lands.

7. On approval by the Commissioner of Crown Lands of an application for a water privilege, he may order a lease of same to issue therefor, such lease to be for a term of ten years, with the right of renewal for a further term of ten years at the same rental, if the covenants and conditions have been performed and fulfilled, and thereafter with the further right of renewal for a term of twenty years upon such terms and conditions and at such rental as may then be provided by law or regulation.

8. The rental under any such lease shall be such sum as may be fixed by the Commissioner of Crown Lands, and shall be payable yearly in advance. Where application is made for the right to develop not more than half the maximum estimated capacity of a privilege at the average low stage of water as aforesaid, and where the granting of such application would not prevent or interfere with the development by other parties of the remaining capacity of the said privilege, the Commissioner may grant the same and may, if he think proper, reserve a portion of the land connected with the water privilege, provided that in any such case the Commissioner may issue a lease or leases for the remaining capacity of the said privilege, and the remaining lands connected therewith.

9. The right of timber owners and others to drive their logs down any river, stream or other body of water, as now by law established, shall not be interfered with, lessened or restricted by the granting of any such lease; and if any dam, weir or other structure be erected or built in connection with the development of any such privilege, with the object, intention or effect of damming the water or impeding the flow thereof, full and proper provision as now by law required shall be made by the lessee for the passage of logs and timber over and through the same.

10. The lessee under any such lease shall not destroy or obstruct the navigation of any river, stream or body of water previously navigable, but shall provide such locks, canals, passages and other means as may be necessary for the proper and safe surmounting or passing of any dam, weir or other work made or erected by the lessee.

11. The lease shall also provide—

(a) For the development and use within a period to be named in the lease of at least one-half the power proposed to be developed and used, and for the development and use of the full capacity of the privilege estimated as aforesaid, or of the remainder of the power proposed to be developed and used, as the case may be, within a further period to be named in the lease.

(b) For the use by other parties than the lessee of surplus or unused water or power not required by him for the purposes of his business, plant or manufactory on such terms as may be agreed upon; and failing an agreement between the parties as to the terms and conditions on which such surplus or unused water or power may be used, and the remuneration to be paid therefor, the Lieutenant Governor in Council shall have power to fix and determine the same, and any Order in Council fixing such terms, conditions and remuneration, shall be final and conclusive and binding upon all parties concerned.

(c) For the erection and maintenance by the lessee of a durable and efficient fishway when so required by the proper officer or authority in that behalf.

(d) Failure or refusal of the lessee to comply with the conditions of the lease, or default in payment of the yearly rental for ninety days after the same falls due, shall work a forfeiture of the lease.

(e) During the continuance of the lease, the lessee shall keep and maintain all dams, weirs, tunnels, races, flumes, sluices, pits and other structures and works necessary for the development and use of such privilege in good repair and condition, and shall not wilfully or otherwise injure or destroy the same or any part thereof, but at the expiry or sooner determination of the said lease, shall leave all such structures and works in good repair and condition, and so that their subsequent usefulness shall not be lessened by any act of the said lessee.

(f) At the expiry or sooner determination of the lease, the water privilege shall revert to and become the property of the Crown as fully as if no such lease had been granted, together with all dams, weirs, tunnels, races, flumes, sluices, pits and other structures or works made or erected by the lessee in connection therewith, and all buildings erected on land covered by the lease; but the lessee shall be allowed a reasonable time to be fixed by the Commissioner of Crown Lands in which to remove all machinery employed by him in the development and use of the privilege, failing which removal such machinery shall become the property of the Crown.

(g) Where there is more than one applicant for a water privilege the Commissioner of Crown Lands may, at his discretion, put the same up at public auction or tender, subject to the foregoing conditions, to be awarded to the highest bidder or tenderer for a lease thereunder.

(h) If at any time or times after the water privilege has been developed, either in whole or to the extent to which the lessee is bound by the lease to develop the same, the said lessee shall continuously neglect for the space of one year effectually to produce power from the said privilege, either for his own use or for that of other persons, unless hindered by unavoidable accident, the Lieutenant-Governor in Council may order and direct the said lease to be forfeited and cancelled.

12. Where a water privilege is applied for by a municipal corporation for the purpose of supplying water, power, light, or heat for the use of the inhabitants thereof, the Commissioner of Crown Lands may issue a lease of said privilege to such corporation if otherwise entitled to receive and hold the same, on such special terms and conditions and at such rental as he may deem proper.

Placer Gold on Vermilion River.

By Arthur H. Gracey

IN obedience to the instructions received from the Director of the Bureau of Mines on the 18th of May, I left Gananoque on the 19th to examine the reported finds of placer gold along the Vermilion river in the surveyed townships of Wisner, Capreol, Norman and Hanmer, and in the unsurveyed territory lying north and west of these townships.

I proceeded to Wahnapitae station on the Canadian Pacific Railway, where I was joined by Mr. Charles Henderson, forest ranger, who accompanied me on the trip. A couple of days were occupied in making arrangements, and on Monday, the 23rd, we left for Wahnapitae lake, lying northeast of Sudbury. I heard that gold had been found on Massey creek, which flows into the bay of the same name at the southern end of the lake. On Tuesday I went over to the creek and found about half a mile from its mouth four men working with a rocker. They had put in a small wingdam, thereby diverting a portion of the stream from its regular channel, and were washing the gravel from the bed of that portion. They were using mercury in the riffles of the rocker, and I could not tell whether there was any gold in it or not, but, judging from the appearance of the mercury, there was little or none. I also panned some of the gravel they were rocking, but found no gold.

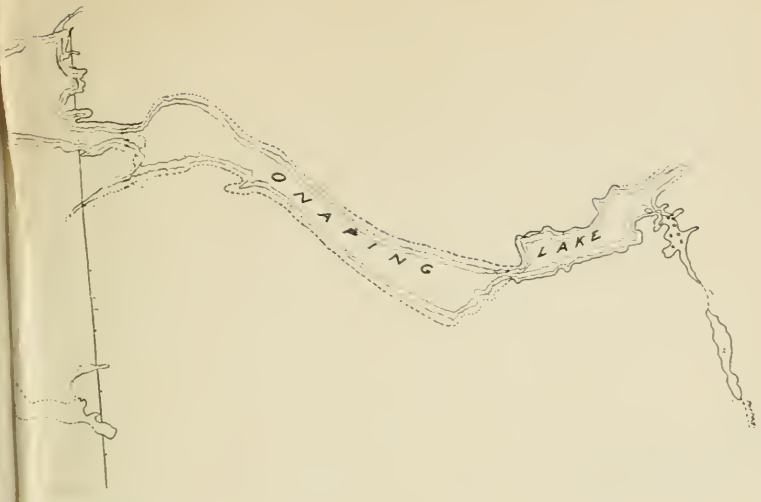
On Wahnapitae lake and Massey bay.

There are some extensive beds of gravel around Massey bay, rising from 50 to 75 feet above the water line, but I found no gold in any of them.

On Vermilion River.

On Wednesday, the 25th, we crossed the lake to Skynner's bay on the west side of Wahnapitae lake, from which a chain of three small lakes and four portages form a connecting link with the Vermilion river. We reached the latter that night, opposite an expansion called Marshy lake, in the northwest corner of Capreol. On the east shore of this lake numerous holes had been sunk in a gravel bed of some extent. I found near the bank and near the surface a couple of colors in one pan. In two holes sunk to a depth of eight and 12 feet farther inland, I found merely traces of gold. I also examined a couple of

Marshy lake on Vermilion river.



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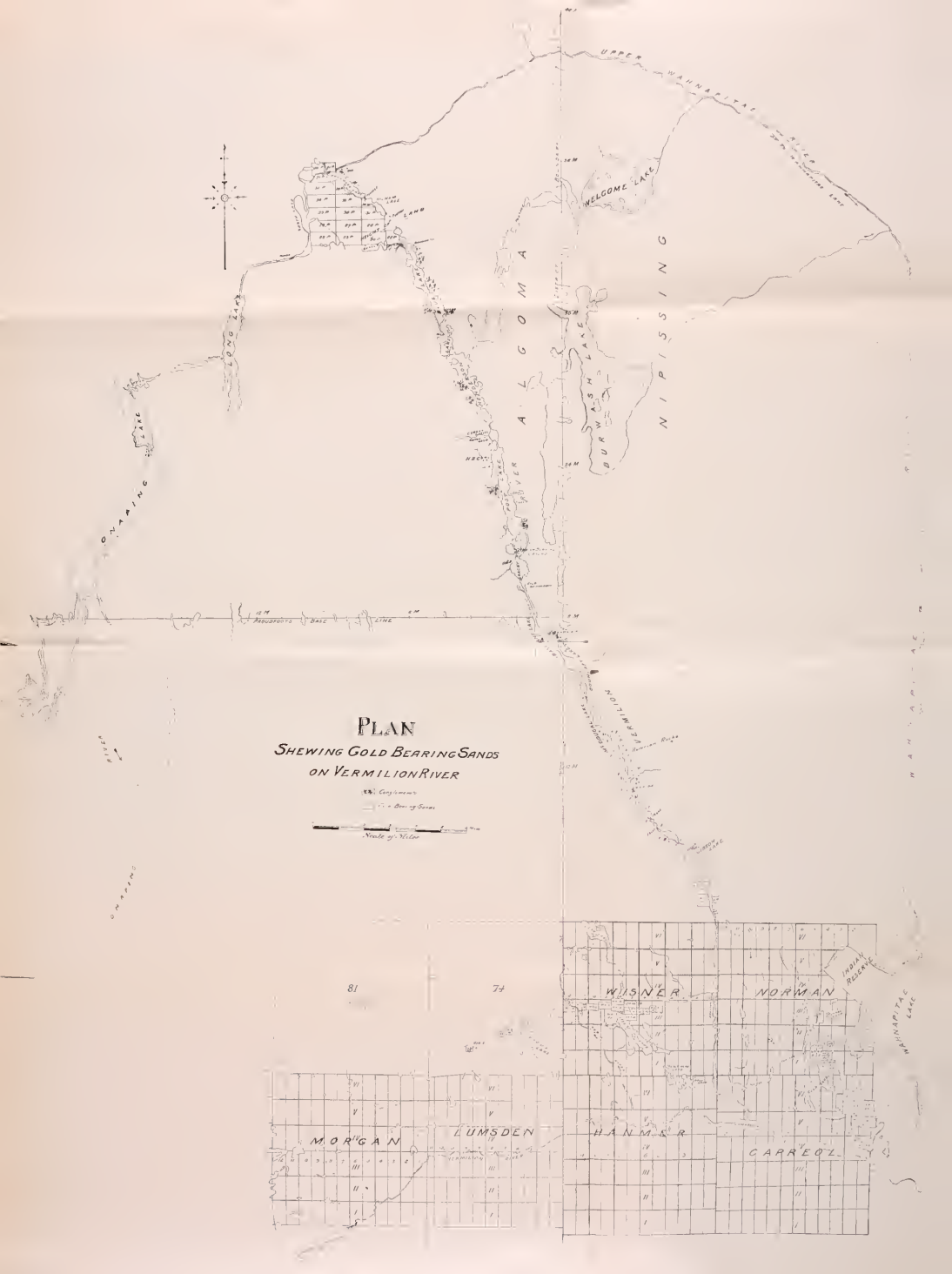
PLAN
SHEWING GOLD BEARING SANDS
ON VERMILION RIVER
UPPER WAHNAPITAE RIVER
WELCOME LAKE
LONG LAKE
ONAPING LAKE
ONAPING
ALGOMA
NIPISSING
BURWASH LAKE
VERMILION RIVER
VERMILION LAKE
WAHNAPITAE LAKE
WAHNAPITAE RIVER
INDIAN RESERVE
WISNER
NORMAN
MORGAN
LUMSDEN
HANMER
CARR'EOL
81
74

creeks entering near this point, but found no favorable indications.

From Marshy lake we moved up stream to a point called Dacey's camp, in the northeast corner of Hammer. At this place the first discovery of gold is reported to have been made last fall. On both sides of the river there are large beds of gravel, carrying gold in varying quantities. Opposite the camp on the east bank of the river I found traces of gold in the grass roots, and from a hole about three feet deep. On the ridge about 150 yards from the river, and probably 15 feet higher, I got over 30 colors to the pan, but they were quite fine.

Dacey's Camp.

Before proceeding further it may be as well to explain for the benefit of those not accustomed to mining phrases what is meant by the words 'color' and 'trace,' and about what value per ton or cubic yard of gravel a certain number of colors would indicate. A small particle of gold visible to the naked eye, or under the ordinary magnifying glass, is called a color; consequently, if after washing a pan of gravel five or six particles or specks of gold are seen, they are spoken of as colors. The term trace of gold is used more particularly in connection with assaying, and means that there is gold, but in such small quantities as to make an estimate of value per ton difficult. A cubic yard of dry gravel will weigh about 2,900 pounds. From 12 to 14 cubic feet of tightly cemented, or about 18½ cubic feet of loose gravel, will weigh a ton. An average pan of gravel will weigh from 20 to 30 pounds, according to moisture. There are about 132 average panfuls in a cubic yard.

Color and trace.

As an example of value per ton or cubic yard, I got from a panful of this Vermilion gravel 34 colors visible to the naked eye, but which showed under the microscope altogether 44 colors. The combined weight of these colors was 1.3 milligrams, which, taking the weight of the gravel in the pan at 20 pounds, would give a value of about eight cents per ton, or about 12 cents per cubic yard, taking the gold at $20 per ounce, which is more than it would be worth. These were average colors; the largest weighed .5 milligram and the smallest, as mentioned, was invisible to the naked eye.

Above Dacey's camp we passed numerous beds of gravel in which prospect holes had been sunk, but only few to a greater depth than three or four feet. Pannings from the majority of these showed little or no gold. At one or two places, some two or three hundred yards from the river, I found a color or two in nearly every pan. This was just below Ross lake. Lying about half a mile east of Ross lake is another small lake, the ridge between being all gravel and carrying gold. There was a party of prospectors camped on this ridge, but little development work had been done. Several holes had been sunk to depths of from eight to 12 feet, and there was water in the bottoms of most of them. There was little variation in the value of the gravel from the surface to the depth reached. It would average from 15 to 30 colors to the pan. One pan from this place contained 105 colors, I was told. This deposit extends for some distance in a northerly and southerly direction. On the west side of Ross lake there had been some prospecting done also; one hole about 12 feet deep was on the bank of a creek about a quarter of a mile inland from the lake, and showed traces of gold. The next expansion of any consequence was Fraser lake. A creek enters from the west, and at the junction I found somewhat coarser gold than the average of that below, running from three to five colors to the pan.

Prospecting near Ross lake.

Along the banks of the next lake there have been several claims taken up and several shallow holes sunk. A short distance from the east bank of this lake high bluffs of Huronian rocks rise, and the strip of gravel between their base and the shore carries gold averaging from seven to 12 colors to the pan. Sault Ste. Marie parties have taken up some claims here and above, and they informed me that they intended making preparations to sink to bed-rock. One hole in this vicinity, sunk to a depth of 10 feet, passed through about three feet of soil, then two feet of gravel carrying from 10 to 12 colors to the pan. Below the gravel was a layer of sand, and below that again a sort of hardpan. Neither in the sand or next the hardpan was there any gold.

On the banks of Gibson lake, the next of consequence, were several locations. One on

the west side, where a small creek enters, covers some favorable looking gravel, and pannings from the surface to a depth of five feet showed on the average about 15 colors. There is a good opportunity for the owners of this claim to do development work, as the creek would furnish them with a fair head of water. At the head of Gibson lake is a deposit of fine sand carrying traces of gold. Above Gibson lake deposits of gravel are scattered along as shown on the accompanying map. The greater part of it has been claimed, but, with the exception of a few shallow holes, no work has been done. At many points my samples contained no gold, but when they did it was about the usual amount, a few fine colors.

Locations around and above Gibson lake.

Around the old Hudson's Bay post, on what we called Post lake, there is a large area of gravel, and samples taken from the bank showed coarser gold than was found lower down stream, but no increase in quantity. About 20 acres surrounding the Post are cleared ; the balance of the country for some miles west was covered by green pine. There is a creek from the west entering the next lake above Post lake, which passes through gravel for about three miles. A party of prospectors was camped on it, near the lake. They had a cut opened up on one of the bars of this creek about 15 feet long and four feet deep. The gravel was somewhat cemented, and carried coarser gold than any I had hitherto found. The owners purpose working up the creek with a bed-rock sluice, which would prospect he deposit very well.

Showings at the old H. B. Company's ost.

Above this point to the headwaters of tha Vermilion we did not notice so many discovery posts, although most of the land has been taken up in large tracts. Gold is found in the surface gravel in many places, but I noticed little difference from the average of that down stream.

Wahnapitae River and Onaping Lake.

From the headwaters of the Vermilion we portaged into Wahnapitae waters. The latter river encircles the head of the former to the northwest. The gravel beds continue about the same, and down the Wahnapitae a couple of miles from where it leaves Islet lake I sunk a hole through about three feet of sand, then came into gravel carrying a few fine colors to the pan. In another hole half a mile farther up stream, which was about six feet deep, the gravel showed at the surface from 10 to 15 colors to the pan, and below the gravel was a streak of fine sand lying on the bed-rock which carried no gold.

Exploring the Upper Wahnapitae river.

Although we met a large number of prospectors scattered along the river we found no one doing any actual prospecting or development work, and of course no "dust" was being taken out. The rush appeared to be to secure locations. No one, so far as I heard or found, had reached bed-rock on the Vermilion, and to do so in many of the beds would be an expensive operation, as it is no doubt in many places far below the surface, possibly 100 feet or more at some points. Water would be encountered at moderate depths, and the gravel would require careful timbering. There is an extensive territory in the Vermilion and Wahnapitae basins (and possibly extending west to lake Onaping, as I found traces of gold on the banks of that lake)containing large deposits of auriferous gravel. Little of the gravel sampled along the route would go more than from 12 to 15 cents per cubic yard ; the average was much less, although pans have been washed that would indicate a value of from 50 cents to $1 per cubic yard.

Extent and depth of the gravel beds.

General Conclusions.

In California ground has been worked at a profit by improved hydraulic methods which yielded only three cents per ton, and in British Columbia gravel is handled at a profit which yields 16¼ cents per cubic yard. This method could not be used on the Vermilion to any extent, first because there is not sufficient fall to get a strong head of water, and secondly there would be no dumping ground for any quantity of tailings. With the improved chain bucket dredge, gravel has been handled at a cost of from three to five cents per cubic yard. A dredge of this type is calculated to handle from 60 to 100 cubic yards per hour, and requires only enough water to float it and wash the gravel. One of these in operation

Placer workings in California.

in the Western States was recently visited by the writer. The machinery, consisting of a large boiler, engine, pumps, donkey engines, etc., was compactly placed on a flat bottomed barge or scow. The elevator buckets were attached to an endless chain ladder which passed over revolving drums or cylinders at the upper and lower ends of the carrying frame, the principle being the same as a grain elevator in a flour mill. This frame could be lowered so that the buckets would take gravel from any depth less than 50 or 60 feet below water. At the top the gravel was dumped into a large hopper into which also about 400 miner's inches of water was flowing from a Chinese pump. From the hopper the gravel was washed into the sluices, two in number, which, elevated above the machinery, ran parallel from the forward end back far enough to clear the stern. These sluices had a fall of about one inch to the foot. Raised a few inches above their bottoms and running their entire length was a system of iron screens. Each screen was about three feet long and arranged with a slight drop from one to the other. All the coarse gravel, etc., was carried over on top of these screens, while the fine stuff containing the gold passed through on to burlap and Canton flannel which lined the bottoms. The gold was caught in the fibres of the burlap and flannel, whence it was recovered when cleaning up by careful washing in a vat or tub. These washings of course contained a large amount of black sand, and they were afterwards carefully passed over amalgamated plates to separate the gold. This plant was handling about 100 cubic yards of gravel per hour, and was being operated at an expense of less than $75 per day of 24 hours.

The deposits on the Vermilion river show water action, and necessarily of a much larger body than that now existing. The coarsest of the gold under the microscope appears mostly in thin plates and flakes with rounded edges, while the finer colors are more "shotty" in form.

To estimate the probable value of these placers would be impossible until more actual development work has been done. They are not "poor men's diggings" so far as can be judged at present and whether they will improve in value as bed-rock is approached, which in a general sense is the case with placer diggings, remains to be seen.

My examinations were necessarily superficial. To make them more extended would require considerable time, with a chance to do more work of a practical nature.

Mining Schools and Classes

Kingston School of Mining

The following report on the work of the Kingston School of Mining is made to the Bureau under date of June 25, 1898, by the Director of the School :

Fifth Session of the School.

In presenting to you my report of the fifth session of the School of Mining, I have in the first place to note a considerable increase in the number of students who have attended classes in the School. The number taking a full course in Mining Engineering has increased from 13 for the session 1896-97 to 30 for the session just closed. The total number of students registered was 191 ; for the session 1896-97 it was 172. The Prospectors' course was attended by 25, several of whom remained until the close of the regular session. Two of these have entered upon a degree course. In both the Prospectors' class and the class studying for a degree in Mining there are men from nearly every Province of the Dominion, including British Columbia and Nova Scotia. I add a classified statement of the numbers of students :

Mining Engineering (Degree Courses)	30
Mining Engineering (Prospectors' Courses)	25
Other Engineering Courses	6
Veterinary Medicine	3
Other Courses	129
	193
Deduct, counted twice	2
Total number registered	191

Outside Classes.

Outside classes were conducted last summer by myself and Mr. F. J. Pope in Bancroft, Marmora and Madoc, and were attended by 109 students, many of whom, as is usual with these classes, could be present only occasionally. No attempt was made to give theoretical instruction, except a few essential working ideas in Mineralogy and Geology. The greater part of the time was spent in examining rocks and minerals, in testing their properties, and in assaying samples for gold and silver. Instruction was also given in sampling and in the use of the miner's pan. Several prospects were visited at the request of the owners, and attention was directed to the possible discovery of rinstone, corundum, and other valuable minerals not being then searched for by prospectors in that district. The number of students in attendance were: At Bancroft, 41; at Madoc, 33; and at Marmora, 35. The Bureau of Mines collection at Marmora excited much interest, and was found very useful for instruction purposes. These collections, now installed in five mining centres in the Province, were suggested by Mr. Hamilton Merritt, and prepared in the School of Mining. Their usefulness amply justifies both Mr. Merritt's foresight and the expenditure incurred by the Government.

Schools in the Eastern part of the Province.

Mr. Hamilton Merritt held classes in the western part of the Province, and reports as follows:

'The desire for prospectors' classes during the winter or early spring has been expressed more than once, and particularly in the Rat Portage petition. It was urged, with reason, that more time could then be given to this kind of work, before the rush of summer business came on. The experiment of holding four prospectors' classes in western Ontario during the winter and spring of the present year was therefore made, and while the attendance was on the whole not larger than the previous occasion on which classes were held in the west, it was much more regular. The classes at Rat Portage and Sault Ste. Marie were decidedly larger, Sudbury was about the same, and Port Arthur was a smaller class owing to Fort William men not co-operating as formerly.

Schools in the western part of the Province.

'The classes were held at Rat Portage January 24-February 4, Port Arthur February 7-19, Sudbury March 21-31, and Sault Ste. Marie April 6-16. At these four towns the Government collections of minerals and rocks had been placed. These collections were originally suggested by myself, largely in the hope that they would become the nuclei of good local collections. This desirable object has not yet been carried out at any of the above mentioned places, but it is receiving consideration, and a commencement has been made. The collections proved most useful for the purposes of instruction, and no doubt will be occasionally referred to for comparison of samples of ore and rock.

Mineral collections.

'The work of the classes was on somewhat similar lines to those previously adopted by me for giving prospectors practical instruction. Advanced character of work was undertaken by some of the students who had previously attended my class, and in one instance some very creditable apparatus had been made as a result of my previous class. It is somewhat difficult to know exactly how much interest a community is going to take in a prospectors' class. Where there is no local excitement, due to discovery or speculation, but few persons may avail themselves of the instruction, even if the same is gratuitous. This was seen to be the case at Sudbury, where, although 31 attended the classes in the aggregate, the average and constant attendance was small. At Sault Ste. Marie the smallest class in the west assembled in 1895, but this year I had there the largest both in point of general numbers and constant attendance. This was due to the discovery of gold in Michipicoton and the general local interest displayed in the same. The total attendance at Rat Portage numbered 61, and the class at Port Arthur 33, the total attendance in the four classes being 192. I must acknowledge the kindness of Mr. Connor at Rat Portage, Mr. Burk at Port Arthur, the school board at Sudbury, and the trustees of the Mechanics' Institute library at Sault Ste. Marie, in placing rooms at the disposal of the class.

Interest in the work.

'Regarding the general benefit of these classes, the result of my experience would indicate to me that theoretical teaching of classes of this sort is not of much use to prospectors, but that practical benefit in sampling and field-testing and determination is derived from them.'

The experiment of keeping the mining laboratory open all summer was not an unqualified success, and I cannot advise a repetition of the experiment. During the year since my last report 13 lots of ore have been tested and there are now on hand awaiting treatment three lots. The Professor of Mining Engineering reports fully on this subject.

Mineralogy and Assaying.

Prof. Nicol reports: 'The illustrative specimens, models, etc., in the lecture-cabinet have been materially increased as the result of my sojourn in Europe. Two cases still remain to be unpacked and a case of fine specimens valued at $100 is waiting in Freiberg till I can send over Canadian specimens in exchange for them. The general collection has been considerably increased from various sources.

Prof Nicol's report.

'A new feature of the work was a short course of evening lectures, illustrated by lantern slides, to supplement the regular day lectures. About 100 lantern slides have been secured for future use, and it is my intention to increase the stock during the summer holidays, so as to be prepared for a regular course of evening lectures next session.

'The cabinet for museum specimens used for the work in descriptive mineralogy is almost full, so that provision must be made for growth in this direction. It is very desirable that cabinets should be provided for collections of minerals arranged according to the metal constituent, e.g., gold, silver, lead, copper, nickel and iron ores. These would be very convenient for the lectures in chemistry, ores, and ore deposits, and particularly useful for work in the prospectors' classes, which have now become quite an important feature of the school.

'An urgent need in this department is a projection apparatus provided with large Nicol prisms so that the optical properties of minerals may be illustrated to all the members of the class at one time. In this way time and energy may be saved. A suitable instrument can be procured for about $250.

'The working plant in the assaying laboratory has been increased by a convenient apparatus for the electrolytic assay of copper ores, by means of storage batteries charged from the city current.

'The balance room is inconveniently small for good work with our prospectors' class. It is very desirable that it be enlarged and another pulp-balance be ordered. A second muller, too, for grinding ore would be a great convenience, and would prevent crowding and loss of time.

'Twenty-four new places have been arranged in the blowpipe laboratory, so that now there is accommodation for 48 students, working 24 at a time. There is urgent need that some provision be made for artificial ventilation.'

Geology and Petrography.

Prof. Miller reports: 'While the more theoretical side of Geology is not neglected, still it is recognized that the chief object sought in establishing the School was the development of the latent mineral resources of the Province. Keeping this object in view, the different courses—elements of Geology, Petrography, etc.—are made to fit into and supplement one another, and to lead up to what is the highest and most important branch of the subject for a technical institution such as this one, namely, economic or applied geology. The attention of students is directed to problems the solution of which would have an important bearing on the development of the resources of the Province. While it is recognized that certain parts of the subject are best studied in the class-room or laboratory, it is evident that this instruction should be supplemented by as much field work as possible. During the fall term considerable time is devoted to excursions. Last autumn a number of such excursions were held and a trip of two days' duration was made by a steamboat down the Rideau Canal, and a part of the interesting

Prof. Miller's report.

mineral township of North Burgess was examined. The geology of the city suburbs presents considerable variety, which is taken advantage of in the class work.

'Two of the advanced students acted as assistants to the writer during his last season's field work in Eastern Ontario, and they, as well as others, have assisted him very materially in the examination of material and in the compilation of maps, in the preparation of a short report during the past session. A number of students have also been engaged, under the direction of Professor De Kalb, in making a mill test of the corundum rock got out by the writer in November. It is hoped that other material for laboratory and mill tests may be secured during the coming summer, which cannot fail to make the work of the School of a thoroughly practical character.

'That last summer's work has resulted in attracting attention to the mineral resources of the Province and to the School is evident from the notices of it which have appeared in the press, particularly in such technical publications as the Mining and Engineering Journal, New York, and the London, Eng., Mining Journal. Private communications have also been received at the School concerning the subject from persons interested in the mineral industry and living in the United States, England and Germany.

'One of the most interesting classes in geology during the last and other sessions was that of the prospectors, which is held annually during January and February. If the School has one distinguishing feature in connection with its work, it is in the opportunities it offers to men to come here and take a short course at the time of year most convenient for them.

'At present and for years to come there will be work in this country for mining pioneers. By far the greater part of the Province, and the part about which so little is yet known, offers opportunities for the prospector and explorer. Hence I consider the short courses which the School offers the most important for the country in its present stage of development, and moreover the work of the School along these lines may be said to be almost unique.

'The equipment of the Petrographical laboratory, which was begun two or three years ago, has been only partly completed. The equipment should be completed by the beginning of next session, as considerable time was lost and labor exended during last session owing to the means by which work had to be done. The Geological lecture room should be provided with a suitable lantern table and drawers for lantern slides. A few extra cases are required for material which is being constantly added to the collection. The School should be provided with a short focus camera for use in the preparation of lantern slides and in indoor photography generally. Great use can be made of lantern views in the lectures in all the departments.

Equipment required in Geology.

The Mining Laboratory

Professor DeKalb reports: 'The plant and equipment of the Milling Laboratory have been considerably augmented during the past winter by gift and purchase. We are now able to make practical concentration tests upon a large range of products, such as copper, lead, iron and other ores. The gold extraction department of the mill has also been improved by the completion of the cyanide plant.

Prof. De Kalb's report.

'The additions to the laboratory have been the following: 1 inlet discharge hydraulic classifier; 1 vertical line hydraulic separator; 1 3-compartment Hartz jig; 1 buddle; 1 Wetherill magnetic concentrator; 1 centrifugal pump; 1 Sturtevant blower; 1 dust tower; 1 constant-level water-pressure apparatus; 1 gyratory screen shaker; 1 automatic sampler; 1 jig pan; 1 set of 20 brass-wire riddles. Also a considerable number of tools, such as saws, hammers, augers, wrenches, calipers, etc., have been added, enabling many necessary repairs and alterations to be quickly made, without calling on mechanics outside. We are still largely hampered for want of proper tools, however, such as vices, pipe cutters and threaders, and carpenter's tools.

'In addition to the above there have been promised as gifts to the School one pneumatic jig and one gyratory vanner, which will

soon be installed; also a water motor of the Cazin type.

'While our facilities have been appreciably improved during the past year, many new appliances are sorely needed. The object of practical ore-milling instruc ion being to acquaint students with the operation of all the types of crushing, concentrating, and other accessory appliances accepted in the mining world, we must perforce regard our equipment as being incomplete until all these types are represented in our mill.

Plant and equipment needed.

'We are at present deficient in the crushing department of our plant. I would recommend the purchase of improved rolls, with parts easily replaceable, having independent belts for each roll, as a substitute for the old machine. I would also suggest that, as soon as convenient, the following additional crushers be secured: 1 gyratory rock breaker; 1 Sturtevant or cyclone mill; 1 ball mill; 1 sectorator.

'The concentrating plant is deficient in the following particulars: 1 3-compartment Spitzkasten; 1 accelerated jig; 1 side-bump percussion table; 1 end-bump percussion table; 1 round buddle; 1 end-bump screen with replaceable screens; 1 trommel.

'The existing power plant, which is even now inadequate, would have to be supplanted by new boilers and engine. It would be desirable to add boiler and engine rooms to the present structure, and install a 50 h.p. engine and two boilers. In order to afford opportunity for comparative boiler-testing practice on the part of students, it would be well to secure two different types of boilers, the common horizontal flue and the water tube. Plans for all these conditions are now being prepared, in order that estimates may be obtained.

Other Wants of the School

Mr. Mason reports that the drafting room has been, during the past session, filled to its utmost capacity. What is to be done with the larger number which may be expected next session is the problem.

Drafting

These reports indicate an amount of activity which accounts in part for the over-expenditure noted by the treasurer in his report.

Professor Miller does not overstate the importance of the prospectors' class. The fact that it yearly includes men of such good attainments, many of them actually engaged in mining and prospecting, is a sufficient guarantee of its importance to the country. But the duplication of the classes causes the instructors to be very much overworked. It is therefore to be regretted that the Government has not placed at our disposal the full sum asked for to provide assistants to relieve this pressure. The department of mineralogy and assaying should be the first to be strengthened in this way.

In conclusion, it is necessary to point out that every corner of the Carruthers Science Hall is now occupied, and that there is some need of room for expansion. The time is approaching when no further advance in numbers of students or in equipment can be made without a third building.

I have the honor to be your obedient servant,

W. L. Goodwin, Director.

School of Practical Science.

In the report for 1896 a full description of the assay, blowpipe and chemical laboratories, the milling plant and the collections of minerals, rocks and fossils was given, to which those who may be interested are referred. During the season of 1897-8 a reverberatory roasting furnace and a large muffle and crucible furnace were erected. The cyanide and chlorination plant have also been completed and operated. The equipment of the school for handling Canadian ores in quantities of one or two tons is thus approaching completion.

Equipment of the School.

It must not be forgotten that the academic training of a mining engineer does not lie wholly within the fields of mineralogy and geology, metallurgy and mining. He requires in engineering subjects proper very much the same training as the civil and mechanical engineer. The course in mining engineering in the School of Practical Science owes its strength very largely to the complete equipment of the school in civil and mechanical engineering, of which the portions necessary for the mining engineer are included in the mining course.

The course of training.

The number of students in all courses in attendance during the session 1897-8 was 161, of whom 69 received instruction in the regular classes in mineralogy and geology, mining and metallurgy, 37 of these being regular students in the department of mining engineering. A special class was formed for prospectors which was attended by 15 students.

Attendance of students.

The school was authorized by the Bureau of Mines to carry on a certain amount of work during the summer and autumn of 1897. This work was assigned to Mr. J. W. Bain, Fellow in Mining Engineering, and the following is a copy of the report made by him to the Council of the School :

Mr. Bain's Report to Council.

'At the close of the session of 1896-7, in May, I had the honor of being appointed by you to take charge of the work in the experimental treatment of ores. The following is a report upon the manner in which your instructions were carried out.

Lines of work carried out.

'The work done was of four kinds, viz.:

1. The treatment of large parcels of ore.
2. Work in the museum of the school.
3. Work for the Department of Crown Lands
4. Original work.

'Of these the first was by far the most important, and claimed the largest part of the time. In order that the supply of ores should be ample, steps were taken to make known to persons interested in mining affairs that the school was prepared to treat gold ores in parcels of one and two tons. Advertisements to this effect were inserted for considerable periods in the Globe, Mail and Empire, and World of Toronto, the Sudbury Journal, the Port Arthur Herald, the Wabigoon Star and the Rat Portage News, whilst a circular setting forth the advantages of the mill test for gold ores, and another in reference to the cyanide process, were distributed as widely as possible. As a result six lots were received for the stamp mill, and the concentrates from one of these were treated by cyanidation.

Treatment of ores.

'The first was a parcel of 2,025 lb. from eastern Ontario, which contained a small amount of free gold and some valuable concentrates; the second, 2,000 lb. from western Ontario, was found to be too poor to mill; the third, 2,000 lb. from eastern Ontario, was poor in free gold, but rich in concentrates; the fourth, 750 lb. from western Ontario, yielded a small amount of free gold, and some concentrates; from the fifth, 1,140 lb. from western Ontario. there was obtained a handsome amount of free gold and a quantity of rich concentrates; from the sixth, 1,200 lb. from western Ontario, the returns were much the same as from the fifth. No names or figures are given in this statement, on account of the understanding with the shippers that the results of the tests should be kept private.

'The value of these mill runs to persons who are anxious to obtain reliable data as to the value of a deposit can hardly be overestimated. The error in selecting a ton or more as a representative sample will be very much less than that incurred when only 10 lb. is to be taken for the same purpose, and the partial elimination of the error in sample is a desideratum of no small importance. The difference between the results given by a mill run and those obtained from the assay of small samples is strikingly illustrated if the ore to be treated carry any considerable quantity of free gold. In such a case the results of the assays will vary among themselves, and it is not easy to arrive at the value of the lot, but when the ore is milled this difficulty is obviated almost entirely and a close approximation to the truth is obtained. During the test, valuable data in regard to the economic working of the ore are acquired. The amount of free gold which is arrested by the amalgamated plates is an important factor in the treatment of most auriferous ores, and it is hard to devise apparatus on laboratory scale which will yield results strictly comparable with those obtained in the stamp mill. The concentrates, possessing a considerable degree of purity, are carefully collected, dried and their value ascertained; if it is desired, the percentage of extraction by chlorination or cyanidation can be determined. Again, assays of the tailings often give valuable information, pointing, for example, to the prejudicial results attending the use of too fine or too

coarse a screen. Illustrations of the points just stated could readily be given from the results of the summer's work, and these demonstrate most emphatically the value of the tests.

'Closely related to the mill run is the testing of an ore, which, for some reason, is not desirable to stamp. This is carried out by crushing the material with a rock breaker and selecting carefully a set of samples which are assayed. Three such tests were made.

'To sum up : Of the eight parcels received, five were treated in the stamp mill, three were tested by sampling, and some concentrates were subjected to the cyanide process.

'Work in the Museum was done during the first part of the summer, and consisted in the arrangment and labelling of the ores and some of the rocks and fossils. The collection of gold ores is of fair size, and specimens from nearly all the Ontario mines are on view. The same may be said of the iron ores.

Work in the Museum

'During July I received instructions to proceed to the Hamilton blast furnace and take samples of iron ores mined in Ontario, under section 1 of the regulations to govern payments out of the Iron Mining Fund. Assays were made and the results reported. In September I was sent to Coboconk to report on some properties in the district. Three days were spent in examining different locations and in giving information. A complete set of samples were taken and assayed on my return. From the results a report was prepared and sent in. In September two half days were spent in setting up and taking down the exhibit of minerals belonging to the Bureau of Mines. There was but little time for original work, and what was done was carried out with a view to the advancement of the metallurgy of gold. J. Watson Bain.'

Work for the Bureau of Mines

Mr. Bain is at present conducting summer schools in mineralogy in the Port Arthur, Rat Portage and Seine River mining districts.

ANNUAL REPORT

OF THE

CLERK OF FORESTRY

FOR THE

PROVINCE OF ONTARIO

1898.

PRINTED BY ORDER OF

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1898

PARLIAMENT BUILDINGS, JANUARY, 1898.

Hon. J. M. GIBSON,

Commissioner of Crown Lands.

SIR,—I have the honor to transmit herewith the report of the Bureau of Forestry for 1898. During the latter part of the year 1897 important investigations were prosecuted by the Royal Commission appointed to report upon a plan to make productive the non-agricultural portions of the Province by securing a perpetual growth of timber upon them. The preliminary report of this Commission, of which I had the honor to act as Secretary, has been presented to His Honor the Lieutenant-Governor with some recommendations tending towards the object desired in the appointment of the Commission.

In addition to the valuable work of the Commission its creation served to direct greater public attention to the subject. The two lumbermen on the Commission, Messrs. Rathbun and Bertram, have manifested the most patriotic zeal in their efforts to solve this most important problem, and the final report of the Commission cannot fail to be of great value to the people of the Province.

Further reference is made in the report to the spread of *Chermes Abietes*, which is a menace to the safety of our great spruce forests, by Dr. Brodie; an article on "The Birches," by Mr. Kirkwood, and some additional remarks on forestry for farmers and other notes.

I have the honor to be, Sir,

Your obedient servant,

THOMAS SOUTHWORTH,

Clerk of Forestry for Ontario.

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REPORT

OF THE

CLERK OF FORESTRY.

THE GENERAL PROGRESS OF FORESTRY.

In connection with the work of the Bureau of Forestry it is satisfactory to be able to note that great progress has been attained during the last few years in the knowledge of forest conditions, and a thorough understanding of the various and complicated factors of the problem of forest preservation in Ontario. The growth of public opinion on the subject since the first issue of Forestry reports has been very marked. From being almost oblivious to the fact that such a science as forestry existed, as the people of Ontario practically were before the Government undertook to disseminate information on the question—they have now become as intelligently conversant with its main outlines and as firmly convinced of the desirability of forest maintenance and tree culture as any community outside of those European states where forestry laws have prevailed for generations. Every person of fair education now understands that great economic evils have resulted from deforestation, and that the only way to arrest the process of deterioration in the climate and the fertility of the soil is to retain and, in some cases, restore the forest over a due proportion of the total area. Intelligent agriculturists throughout the Province are now carefully considering the remedy for over-clearing, as its injurious consequences of diminished water supply and frequent droughts are more acutely realized. They have noticed that many springs have dried up, streams that were once of considerable volume being alternately in flood or dry, according to the season. They also perceive that the lapse of a few weeks without rain has a far more disastrous effect on their crops than was formerly the case, and they can only attribute the change to the great alteration in forestry conditions. When they see conclusions derived from their own observations confirmed by the result of actual scientific experiments such as those detailed in our last report showing that the presence of a belt of forest retards evaporation from the adjacent soil and therefore makes the absence of rain less severly felt—they no longer question the statement that a complete and rapid change from a forest-clad to a treeless country is disastrous and are disposed to co-operate in seeking a remedy.

Timber Not Inexhaustible.

The mistaken but persistent notion that our supply of the best varieties of timber was inexhaustible has at last been effectually exploded and the people have come to realize that it is only by judiciously safeguarding our remaining woodlands and giving the natural principle of reproduction an opportunity to assert itself that we can hope to avert scarcity in the future.

While this marked advance of public sentiment is no doubt partly due to the increasing urgency of the problem and the growing pressure of the unfavorable conditions resulting from deforestation, and partly to the general awakening of popular interest in the subject in other countries, the steady and systematic work of enlightenment pursued by the circulation of forestry information in the form of reports and through the newspaper press has done more than all other causes to bring about the change. The appeals made to the farmers of the Province to do each his part in his individual sphere for the improvement of conditions has not been unheeded. Though but few plantations of any size have been laid out, yet, in inumerable instances, windbreaks and lines of forest trees along roads and fences are seen, barns are protected and adorned with spreading shade trees—and the wood lots in place of being recklessly depleted are now in many cases managed with an eye to economy and the possibilities of reproduction. The extent to which tree culture has been carried in some localities, though still very far short of what might have been done in that direction, has already changed the appearance of the landscape much for the better. The traveller through many rural districts to which the indiscriminate cutting away of the trees by an older generation gave a bleak and uninviting aspect, can hardly fail to note the pleasing effects of extensive farm and roadside planting in restoring something of the charm of a well wooded country.

Natural Reforestation.

Along with the advance in the general recognition of forest influences has come a vast stride towards a more correct knowledge of the habit of growth and general sylvicultural conditions of Ontario's forests—which is of great importance to the future welfare and revenue of the Province. Ever since the early days of settlement it has been regarded as an axiom among lumbermen, farmers and others experienced in woodcraft, that when our valuable white pine forests were once cut away we could not hope for a succeeding crop of the same kind except by artificial planting—a process so expensive as to render it quite out of the question on any large scale. The reason why this belief was so widely held appears to be that as a rule lumbering operations have been followed by devasting fires, which have destroyed most of the remaining seed-bearing trees, together with any young growth and the seeds in the soil which might otherwise have

germinated. The first vegetation which made its appearance on the burned-over territory usually sprung from seeds of inferior varieties of trees blown long distances by the wind or carried by birds. So frequent was this order of things, that almost any lumber operator or forest ranger, guided by his own experience, would afford the information that the white pine forests were always succeeded by a thick and short-lived growth of aspen poplar and less valuable trees, but no pine.

Non-Agricultural Lands.

As the lumberman proceeded in advance of the settler it was found that there were extensive tracts of land bearing a heavy crop of pine that were not suitable for general farming because of their rocky, broken and sandy character. Owing to the prevalence of extensive fires which swept away such timber as the lumberman had left, they were left barren and in time produced the usual growth of poplar. What to do with these large areas of apparently useless land thus became a problem of increasing urgency. They formed for the most part the sources of our principal streams, and it was manifestly in the interest of the general community that they should be kept tree-covered. As, apart from the Dominion subsidy, our forests have always provided the largest item of the Provincial revenue it was felt to be desirable that the cover should consist of merchantable trees instead of forest weeds.

Inquiry in 1890.

Recognizing the great importance to the Province of the utilization of these waste lands the Commissioner of Crown Lands in 1890 requested the then Clerk of Forestry to investigate the condition of these areas and submit a plan for reforesting them, with estimate of the probable cost. The Clerk of Forestry corresponded with timber agents, lumbermen and others acquainted with forest conditions and the result of his investigation was the conclusion that there was but one way to secure a crop of pine on these lands and that was to plant it. After referring to the answers of his correspondents, the Clerk of Forestry in a special report to the Commissioner of Crown Lands, made in March 1891, states :

"No one, of all these correspondents, has known of the seed of pine being sown in the forest, except the Hon. Mr. Joly. His experiment was a failure. But it is the general opinion that, choosing the proper places and simply using a rake or hoe, there would be no difficulty in growing large numbers of trees, if they can be protected from two things : First, the large undergrowth, principally raspberry bushes in many parts, is apt to smother them. Next, the periodic fires, running over the land, would in all probability render much of the work of sowing useless."

After furnishing particulars as to the best methods of gathering and preparing pine seed the report goes on to furnish an estimate of the cost per acre for planting the land to pine, as follows :

Estimate of a Leading Tree-Planter.

Supposing land ready for ploughing, at the ordinary rates it would stand as follows :

Ploughing per acre	$ 3.00
Harrowing, marking, etc	1.50
Planting to pine trees	5.00
Cost of young trees 1 ft. high, good stock, $10.00 per 1,000, and one acre planted 3x6 ft. will take 2,420 trees ; or 6x6 ft. will take 1,210 trees. At first estimate these trees will cost	24.20
Whole cost per acre	$33.70
Or by the second estimate (6x6 ft.) these trees will cost	$12 10
Total by this planting	$21.60

And at least $10.00 per acre, for five years for attendance, etc.

This Plan Too Expensive.

As the acreage of the non-tillable land that has been cut and burned over is very large it is not difficult to see why the Commissioner of Crown Lands decided that it was not wise to ask the Legislature for sufficient funds to replant these areas at a cost of $30 or even $20 per acre. Nothing was done in the matter at that time. In 1895 the Bureau of Forestry was transferred from the Department of Agriculture to that of Crown Lands and the Clerk of Forestry was instructed by the Commissioner of Crown Lands to make a special study of this particular question.

Further Investigation.

The results of fuller and more recent investigation of the condition of these denuded Crown Lands are embodied in the last two reports of the Bureau of Forestry and the preliminary report of the Forestry Commission. The long prevalent notion that pine will not under any condition reproduce itself has been completely exploded. From the facts adduced the question of securing a future crop of pine timber upon denuded pine lands was seen to be mainly one of adequately protecting the young pine from fire, with incidental thinning out in places were it was actually needed. The great success of the system of fire ranging adopted in 1885 has proved that forest fires may be effectually controlled and lessened in number and severity. Pine is found in various stages of growth all over the original pine areas, wherever immunity from fire or cultivation has allowed it to flourish. Yet the possibility of holding forest-fires in check has been demonstrated, hence the probability of raising successive growths of white pine with the resultant revenue to the Province and employment for our people has ceased to be so remote as it appeared a few years ago.

It is noteworthy that the same unfounded but well-nigh universal impression as to the absence of any second growth of pine that prevailed in Ontario was also general in the United States. It is only very recently that investigations undertaken in the leading pine producing States have disproved this survival of rural folk-lore. The *North Western Lumberman*, of Chicago, in its issue of March 27th, 1897, says :

" It has been the common notion of western lumbermen that a pine growth could not be got to succeed the old pine cut off in lumbering operations. This notion was entertained despite the fact that pine was reproduced in Maine and other portions of New England and put up such a good growth that it became available to cut into lumber for box-making and other purposes. It seemed not to have occurred to north-western operators and pine land owners that naturally the area which produced pine could do it again under favorable conditions. The Government Forestry Bureau, through an agent, two or three years ago, made an investigation in several counties of the Lower Michigan peninsula, which proved that all that was necessary to reproduce pine on the cut over lands was to abate fires and keep browsing animals off the lands."

In an article in *Garden and Forest*, of the 10th of March, 1897, Charles A. Kefter, of the United States Division of Forestry, says :

" During a recent trip through Elk, Forest, Kefferson and Clearfield Counties, Pennsylvania, I was repeatedly told that the white pine never followed itself in forest renewal ; that on white pine lands from which the timber was removed a vigorous growth of hardwoods would appear, but that pine never came again on such lands, or at least not until the hardwoods had prepared the ground for a second crop of pine. Among others a leading lumberman of Elk County held strenuously to this doctrine and this gave an added interest to the examination of the woods."

Mr. Keffer then proceeds to give the results of his own examination of two tracts from which the timber had been taken but which had not been visited by fire, upon both of which he found a plentiful and flourishing growth of pine intermixed with hardwood. He points out that during the first four or five years white pine seedlings grow very slowly so that it is easy to understand how in the earlier stages of such a second growth they might escape notice or doubts arise as to whether they would ever make headway as against the more rapidly-growing hardwoods surrounding them. Which would go far to explain the false generalization that has so long remained unquestioned. " The two instances above cited " says the writer " demonstrate the ability of white pine to reproduce itself provided fire is kept away from it ".

The subject engaged the attention of the National Lumber Convention of the United States during the discussion of the Dingley tariff measure in the spring of 1897, as the rapidly approaching extinction of the timber resources of that

country was being employed as an argument against the imposition of a duty on lumber. In order to rebut the conclusion that the period of exhaustion had nearly been reached the Executive Committee of the Lumber Convention made extensive inquiries as to the reproduction of white pine in Maine and secured a mass of evidence from old residents of that State to the effect that the cut-over pine lands there are being continuously reforested by the spontaneous growth of pine trees. Mr. W. H. Brown of Portland a large lumber manufacturer states that some 7,000,000 feet of pine lumber are sawed annually in that city all of second growth brought in from territory in the immediate neighborhood. Many others give similar testimony as to the large quantity of available pine timber which has grown up upon cut-over land in different parts of the State and is now furnishing a supply to the lumber mills.

These facts clearly indicate that the belief that white pine when once cleared away was invariably followed by other varieties of forest vegetation was practically universal throughout the Continent, and that the knowledge of the true laws of forest reproduction is extremely recent and as yet by no means generally realized. If, in the past, methods of lumbering have been adopted, which as we can now see were not in the best interests of the community, it was owing to a mistaken impression derived from or shared by those whose practical experience and opportunities for observation gave weight to their opinions. Had the fact of the natural reproduction of white pine which has only been ascertained within the last two or three years been properly understood in the early days of lumbering it is altogether probable that different methods of cutting would have been pursued. It is well that a more correct knowledge of the principles governing forest regeneration has become available while the extensive areas of our primaeval forest which cover rocky, sterile and broken tracts to the North and North West of the settled region of Ontario are still largely intact. If the results of recent investigation and scientific observation are turned to practical account by a change in our methods of lumbering and care is taken to exclude fire, many years time may be saved in securing new crops of pine as this territory is drawn upon for our timber supply.

Forestry Commission.

With a view to securing further knowledge of the condition of forest growth in this country and to devise the best means of conserving our present forest wealth and provide for its continuance the government last year appointed a Royal Commission to report fully on the subject.* The investigations of this Commission have so far confirmed the opinion that our pine forests will reproduce themselves if allowed to do so The first direct result of the recommendations of the Commission was the passage by the Legislature at its last session of the Forest Reserves Bill, the provisions of which are as follows:

* The preliminary report of this Commission appears as an appendix to this report.

No. 54.] **BILL.** [1897.

An Act to establish Forest Reserves.

HER MAJESTY, by and with the advice and consent of the Legislative Assembly, of the Province of Ontario, enacts as follows :—

Power to set apart reserves.

1. The Lieutenant-Governor in Council shall have power to set apart from time to time such portions of the public domain as may be deemed advisable for the purposes of future timber supplies, but subject to such regulations as may be adopted under the provisions of sec. 4 of this Act.

Proclamation of reserves.

2. Such tracts of land so reserved shall, by proclamation in *The Ontario Gazette*, be declared to be permanent Crown Forest Reserves.

Lands reserved not to be located or sold.

3. From and after the date of such proclamation no lands within the boundaries of such reserves shall be sold, leased or otherwise disposed of, and no person shall locate, settle upon, use or occupy any such land, or hunt, fish, shoot, trap or spear or carry or use fire arms or explosives within or upon such reserves.

Control and management

4. Such reserves shall be under the control and management of the Department of Crown Lands and the Lieutenant Governor in Council shall have power to frame regulations for the protection, care and management of the said Crown Forest Reserves.

Publication of regulations.

5. Such regulations shall be published for four consecutive weeks in *The Ontario Gazette* and shall immediately thereafter have the force of law as if herein enacted and shall be laid before the Legislative Assembly within fifteen days after its first meeting thereafter.

Penalty.

6. Any violation of any provision of this Act or of any regulation made thereunder shall subject the offender in addition to any other remedy to a penalty of not more than fifty dollars and costs and in defanlt of payment thereof to imprisonment for a period of not exceeding six months, with or without hard labour unless the said penalty and costs (if costs are imposed) are sooner paid and the offender shall also be liable for all damages resulting from any such violation to be recovered in any court of competent jurisdiction.

Prosecutions procedure thereon.

7. Any prosecution for a violation of this Act or any regulation made thereunder may be had, under *The Ontario Summary Convictions Act* before any justice or justices of the peace having jurisdiction where the offence was committed.

Short title.

8. This Act may be cited as *The Forest Reserves Act.*

Valuable Legislation.

It is difficult to over-estimate the value of this legislation to the Province. The editor of the *Canada Lumberman* refers to this Bill "which" he says "being entirely away from the strife of parties attracted little notice but which we consider the most important Act that has passed the Legislature for many years." Continuing the editor of the *Lumberman* says: "Taken in connection with the recommendations that no pine tree should be cut smaller than twelve inches in diameter measured two feet from the ground, that the system of fire ranging should be compulsory on all lumbermen and adopted by the Government for their unsold berths, the system if carried out, would introduce a new era in forestry, which would show its effects in after years."

It is extremely gratifying to the advocates of more rational methods in lumbering to thus have the support of the representative organ of the lumber trade in Canada. Until recently lumbermen have been inclined to look upon all forestry advocates as mere visionaries and it is a hopeful sign to find them now seconding the efforts of the Government of the Province to make this great industry a permanent one by securing successive crops of its raw material.

By the term lumbermen is meant, in a general way, the holders of timber limits, who having purchased from the Crown the right to cut the standing timber on a given area, are mainly concerned in removing it with as much profit and expedition as possible. They do not know when the land included in their license may be required for settlement, and in the uncertainty of tenure that necessarily accompanies their license of occupation, they are not much concerned about future crops of pine or other trees. Not all are of this class, however, and it is noticeable that the few who exercise care in cutting, hold limits in which the land is quite unfit for farming, for which reason they no doubt hope to hold the limits indefinitely.

Example of Forestry Practice in Quebec.

A good illustration of forestry practice in the absence of trained foresters, whose skill would undoubtedly increase the production, is afforded by Mr. W. P. Greenough, of Portneuf, Quebec. In reply to an enquiry of the Bureau of Forestry, Mr. Greenough says:

Yours of 13th asking for information concerning principles of forestry adopted by me, came duly to hand. These principles are so extremely simple as scarcely to deserve being dignified by that name. I merely aim to allow timber to be cut no faster than it grows. As I am considering only spruce, which under ordinary conditions may be relied on to reproduce itself without special care, to accomplish this end it is only necessary to limit the size of tree that may be felled. This limit being fixed, I consider it a matter of altogether minor importance whether the lumberman cuts more or less in a given year, or goes over much ground or little. What wood is not taken in one year is certain to be

wanted in another, and meanwhile is earning, by annual growth, an interest on its value. If we fix this value at any given date the interest will thereafter be compounded, by growth upon growth.

"My practice fixes the size of trees to be cut at (in effect) between 14 and 15 inches on the stump. Contracts read, "No spruce trees shall be cut that will not yield more than one log of 12 inches in diameter (12 feet long) at the small end, under the bark." The practical result is as above stated. This I consider sufficient to keep up the supply of logs indefinitely, while allowing an annual cut of 50,000 to 60,000 logs from an area of say 70,000 acres, of which I reckon (say) 20,000 acres as water, swamp or hardwood country. It demands a growth, roughly speaking, of about one log per acre annually on an already well timbered country. I think this is a safe calculation.

"My limit of size has always been entirely satisfactory to purchasers of stumpage. There is at present a considerable demand for small spruce for pulpwood. I have never sold wood for that purpose but I should not advise any one having spruce lands that he wishes to utilize to their capacity and at the same time keep up their value to fix the limit of size, whether for logs or pulp, below what I have done. Any considerable deviation from that I should fear would infringe on the capital represented by the present standing value of timber.

"As regards care of limits, it is not very burdensome. A competent man makes occasional tours among the shanties during the lumbering season, to see that the terms of the contracts are observed, that no timber is wasted and that the cutting is satisfactory.

"For returns I rely on the sworn statements of the cullers employed by the purchasers of rights to cut.. The system most in vogue here of making logs through jobbers or small contractors is in the main favorable in this respect. Every jobber watches the cutting, and if he makes no complaint it is almost certain that I have no reason for any."

Mr. Greenough has adopted successfully the simplest form of scientific forestry and this course is also being followed by some of our own lumbermen. The employment of trained foresters would increase the yield on the same area, but their employment must be regulated by the question of profit and loss. In any event until trained foresters are available, Mr. Greenough's plan would seem to be the wisest under the circumstances.

Forestry Education.

A cause for congratulation is the fact that an attempt to provide for scientific forestry instruction has been undertaken at the Guelph Agricultural College and to a greater extent at Cornell University in New York State. As yet the lectures at Guelph only cover the general features of forestry, tree planting, etc., but at Cornell a chair of Forestry has been established and a twenty-five thousand acre forest provided for demonstration in actual forestry practice. The course will include engineering and all the other requirements of a skilled forester and will be under the direction of Dr B. E. Fernow, late Chief of the Division of Forestry at Washington, who resigned his office under the Government of the United States to take the chair of forestry at Cornell. The idea that scientific foresters are purely theoretical and of little use is now pretty well exploded even in America and it will not be long till forestry is recognized as a distinct profession here as in Europe, where timber land is made to yield in some instances $5 per acre in yearly rental.

Pays to Assist Nature.

It is not difficult to conceive the unprofitable character of a farm left to nature's unaided efforts and in the case of tree growth the skill of the forester is required to help nature in the selection of the proper kinds of trees and in their growth in the form that will make the most valuable timber. Many areas in Ontario are covered with a forest that has taken centuries to grow, a crop yielding say 10,000 to 25,000 feet of commercial timber, and that could in one century have been made to produce 50,000 feet or more of better timber. Hon. J. D. Lyman, of New Hampshire, writing on this subject to *The Country Gentleman*, remarks:

"When years ago it was my misfortune to have an interest in 8,000 acres of forest in the Adirondacks, in which the sound of the axe had never been heard, I found it a charnel-house of dead trees in all stages of decay—a hospital of diseased incurables, and among these and other valueless trees a small percentage of good ones.

"The average of spruce timber in the Adirondack region I see your commission estimates at 2,500 feet per acre, board measure, and worth $1.50 per 1,000 feet on the stump. The average price which the State has paid for the many thousand acres it has purchased is $3.86 and a fraction per acre. The highest price paid for any from which there never has been any timber taken is only $7 an acre. Nature as a forester, with all the unknown centuries to operate in, has grown 2,500 feet of spruce timber to the acre, and this so scattered, small and knotty as to be worth only $1.50 per 1,000 feet! Yet ignorance and laziness join in proclaiming nature the best forester, and that the best way to grow timber is to let it alone.

"Now a forester can take up two quarts of spruce seed and an open acre of such land as I had in the Adirondacks, and in 75 years grow 50,000 feet of spruce of vastly superior quality to the 2,500 feet which nature as a forester had to show after taking unknown centuries. Every tree will be sound, straight, and at least twenty feet of its butt perfectly free from knots, except those little larger than the stem of a clay pipe, and those only within 1½ or 2 inches of the heart. Such is the superiority in quantity and quality of the product when man and nature work together, over what unassisted nature produces.

"In the Albany market merchantable spruce lumber sells for about $12 per 1,000 feet. A little clear lumber is picked out and sold for about $23 per 1,000 feet, while the best, the clearest butts, are "quarter-sawed" and are worth $35 per 1,000 feet at the mill. Instead of having a hundredth part or less of the lumber clear, bringing from $23 to $35 per 1,000 feet, nearly forty per cent. of the whole would be of this high-priced quality; and instead of clearing and breaking many miles of road through twenty acres of tangled woods and deep snow to get 50,000 feet, you would obtain it at greatly reduced expense from one acre."

FARM FORESTRY.

For some years past agriculture has been in a depressed condition owing to the steady fall of prices of the staple articles of produce consequent upon greatly increased production and the opening up of new regions. An occasional favorable season, such as last year, when special causes operate to ensure better returns for the time being, does not invalidate the conclusion that the general tendency is towards a cheapening of agricultural products in the markets of the world, and that no permanent improvement of the conditions of farming, based on a restoration of high prices is possible. The same thing is true with regard to other lines of productive industry. Everywhere vastly increased production, the expansion of manufacturing and of the commercial system, the competition for markets have resulted in lowering prices to the producer and rendering necessary a much greater volume of production on his part to secure equal returns to those formerly enjoyed.

In the business world these new conditions have been met by new methods. The careless, easy-going systems which prevailed in the days of big profits have been abandoned. Foresight, close calculation and a careful adaptation of means to ends are essential requisites of business success. Profits being cut down, every industrial producer in order to maintain his position is obliged above all things to study economy in production to secure the largest possible output with the least expenditure of labor and capital, to take strict account of the various processes of manufacture so as to prevent unnecessary waste. Above all things he must see to it that the capital embarked in his business is kept profitably employed and not invested in stock and machinery which stands idle year after year, bringing in no return. Slackness in this respect on the part of the ordinary man of business would very soon result in bankruptcy.

The Business View.

These conditions are just as imperative in the case of the farmer as with the manufacturer or merchant. In order to hold his own in the face of competition with wheat and stock raisers the world over he must abandon slack, unsystematic methods of doing things, and utilize to the full extent all his resources instead of allowing a large proportion of them to lie idle, as is too often done. The principal capital of the farmer is his land, and any part of the soil belonging to the farm, which is either wholly non-productive or turned to a less profitable use than it might be represents so much wasted capital.

The great volume of idle capital possessed by farmers is indicated by the returns of the Provincial Bureau of Industries for 1896, according to which out of a total of 23,172,408 acres embraced in the rural municipalities of the Province, 3,263,390 acres was classed as waste land. It is probable that the real area of

land which could fairly be included under this heading is considerably in excess of these figures. There are comparatively few farms, even in the best agricultural districts, without more or less land which, owing either to the situation or inferiority of the soil is left uncultivated without being turned to any other profitable use. There are ridges or crests of land where the soil, by washing away, soon becomes impoverished, sandy or rocky patches and hillsides which by reason of their steepness are difficult of tillage. One can travel scarcely anywhere in the older settled parts of Ontario without noticing fields that have been cleared of trees, in which the land was found to be so poor it was thought not worth while to remove the stumps, and they still remain. The field is supposed to furnish pasture, but of such a poor character as to provide little if any rent for the land. Again there are often partially cleared woodlands which have become grass grown sufficiently to check the new forest growth and are allowed to remain partly wooded for the sake of fuel supply and used for pasture. The value of the diminishing wood which, under such conditions, cannot reproduce itself, falls far short of the yield that the land would return if either kept properly and completely under timber or cleared for cultivation.

In Ontario the great development of the business of farming is and will be along the lines of

Dairying and Fruit Growing.

In fruit growing it is obvious to even a casual observer that idle land is useless and it is equally so in dairying. Modern scientific practice is more towards feeding the stock in the stable and abandoning the use of pasture land. Cows are milked all the year around and allowed out of the stable only for exercise. It is found cheaper and more profitable to grow fodder and prepare it for the cattle than to turn them out to hunt for a living. Pastures are playing a less prominent part in farm economy, certainly the stump pasture is a great mistake The land that will not grow grain or roots, will not pay rent as pasture and should be used for the only purpose for which it is profitably adapted.

It is by the utilization of the land which, whether classed as waste or not is not at present in fully productive condition, that the farmer must seek to supplement the diminished returns of his holding. The one thing which nearly all land that, by reason of sterilty or steepness, is uncultivable will yield to advantage is timber.

Planting With Trees.

Planting with trees the waste land or the land which is so inferior that it does not pay to raise agricultural produce upon it at low prices will not merely prove an ultimately profitable investment, yielding rich returns in the future, but the presence of the timber at an early stage of its growth will materially increase the fertility of the surrounding acres.

The Relation of the Forest to the Farm.

The absolute necessity of maintaining a considerable proportion of the land covered with timber in order to ensure conditions of climate and moisture favorable to agriculture is more than was the case some years since. Still it may be well briefly to present a few of the considerations why, independent altogether of any direct money return from the wood, farmers will find it greatly to their advantage to convert the waste land into woodland.

Forests and Climate.

It is a matter of common everyday observation among the older settlers, that with the clearing up of the country, changes of a disadvantageous character have taken place in the climate.

The wind, unobstructed by masses of trees, drifts the snow off the centres of fields to the fences, to the great detriment of grain sown in the fall. Wind storms are more violent and destructive. The supply of moisture is uneven and the effects of long continued dry and warm seasons much worse than formerly Floods and freshets in the springtime or, indeed, after any heavy precipitation of rain are of frequent occurrence. In the summer, streams and springs which once flowed all the year round now dry up entirely, to the great loss and inconvenience of those dependent on them for their water supply.

These changes as well as others of a like detrimental nature are, as is now generally recognized, due to the cutting down of the woods in localities, which, owing to the position and character of the land, ought to have been kept clothed with forest vegetation to ensure the fertility and regulate the water supply of the neighborhood.

The forest acts as a distributor of moisture in several ways. In the first place it absorbs large quantities of the water resulting from the melting of the snow in springtime or continual heavy rains. The forest floor composed of decayed wood and leaves forming a light spongy surface soil, penetrated everywhere by masses of root fibres, becomes saturated with moisture, which, falling upon ordinary soil would have been carried away rapidly. A good deal of water follows the course of the tree roots downward, and by this means a lower depth below the surface is reached by the moisture than in cleared land. The thoroughly soaked sub-soil gives out the water in the form of springs, which fertilize neighboring land of a lower elevation. The forest, in fact, serves the purpose of a natural reservoir, storing up water and giving it out gradually during the dry weather in trickling rivulets which maintain the flow of the streams, or in the form of evaporation through the leaves of the trees and from the damp forest floor, which cools and moistens the whole surrounding atmosphere and tempers the parching heat of summer. Any one leaving the open field or highway on a hot day in summer for the shade of a thick wood, cannot fail to notice that the atmosphere of the forest is not merely cooler than that of the surround-

ng open country, but much moister owing to the process of evaporation by which the stored-up water is constantly given out at the time when it is most needed. The presence of this vaporous exhalation from the forest is indicated by the fact that if the day be cloudy and overcast, although sultry, there will still be a very perceptible difference in temperature, that of the wood being decidedly cooler than the adjoining fields, the absence of sunshine anywhere showing that evaporation and not shade alone is the cause of the relative coolness of the forest atmosphere.

Again, in addition to the amount of moisture thus given out directly by the woodland, it acts as a protection against drying winds, which, during the warm weather, increase the evaporation from the soil exposed to their influence, and deprive the crops of much of the nourishment they require. Scientific observations and experiments have proved that in fields under the protection of even a narrow shelter belt of trees the loss of moisture through evaporation is much less than when exposed to the full sweep of the sultry air currents.

Another way in which the woods equalize the distribution of moisture is in preventing the drifting of the snow. In a well wooded country there is little drifting, as the force of the wind is checked by the trees acting as a windbreak. The snow falls evenly and regularly, and when it melts in the springtime the whole of the soil is watered. In the absence of forests, large tracts of upland are swept bare of snow, which is drifted many feet deep in the low-lying areas with the result that when a thaw comes the more exposed soil is left dry. The crops are thus liable to suffer for lack of due nourishment. A more serious result is that the young plants are often killed or injured by the frosts of the early spring. The critical time for crops sown in the fall is not the winter with its sustained cold, but the break of the season when mild days, during which the surface of the ground is thawed out, are followed by cold frosty nights. If the snow has not disappeared the fall sown crops will not be injured. But in bare fields the young plants are liable to be lifted out of the ground and the roots exposed by the action of cold weather succeeding a thaw. Hence in many parts of the Province where large quantities of fall wheat were once grown successfully it has been found necessary to abandon the cultivation of this crop, on account of the absence of the shelter formerly afforded by the forests.

The snow in the open country melts quickly, a good deal faster in fact than the soil can absorb the water, much of which rushes off into the water courses. In the woods the snow remains unmelted much longer, the water being gradually drained off and absorbed by the forest floor or filtering slowly through it to nourish the adjacent fields.

The Loss of Moisture

is by no means the only injury wrought to agricultural lands by the clearing of heights and hillsides which should have been preserved in forest. The rush of waste water following the melting of the snow or a heavy rainfall, over rising

land is apt to carry away much of the surface soil or vegetable mould containing the most valuable fertilizing elements, leaving the sterile sub-soil exposed. The wooded heights formerly held the water and allowed it to run off gradually and evenly, but the trees and the spongy forest mould having disappeared the water now rushes off in torrents, carrying with it the rich surface soil formed by the decayed vegetation of centuries and cutting into the hillside. Sand and gravel are washed down upon the lower levels, destroying the productiveness of the soil there. Every year witnesses the decreasing fertility of the land caused by the steady erosion of its more valuable chemical constituents in the form of decayed organic matter with every heavy rain storm, until at length the owner abandons the attempt to cultivate it and it passes into the category of waste land, valuable only for such scanty pasturage as it may afford.

The Shelter

afforded by the forest from the severity of the wind is a very important feature of the question. In addition to preventing the drifting of snow in winter and materially checking evaporation in summer as already stated, a shelter belt of timber considerably tempers the violence of the wind, which often greatly injures the crops. Where the soil is light and sandy a heavy wind often lays bare the roots of crops in addition to twisting and breaking down the stems of the young grain. Orchards in particular need protection from the wind, as the prevalence of strong and cold atmospheric currents just at the time when the fruit is forming, is a very frequent cause of blight. Later in the season also the loss by wind falls is apt seriously to diminish the yield.

The value of timber as a windbreak is very largely dependent upon its location, density and elevation. The quarter from which the most destructive winds usually come indicates of course the side most needing protection. The character and conformation of the ground must also be taken into account with the object of securing the highest elevation, the effectiveness of a windbreak and the extent of the area protected being in proportion to its height. A clump or belt of trees situated on the ridge of a tract of rising ground, the sides of which are under cultivation, will be more valuable than if growing on a lower level. The atmospheric currents as a rule, move on planes parallel to the surface of the earth and on striking an obstacle to their course are diverted upwards. When the natural elevations of the soil are further heightened by the growth of forests on hill tops and upland ridges, the intervening slopes and low-lying lands receive efficient protection from blighting and destructive winds. The tendency thus imparted to the air currents will often affect the temperature sufficiently to prevent late spring and early fall frosts, to which other localities in the same latitude are exposed. Where vegetables and fruits are extensively grown even a very slight modification of climatic conditions may be of great importance. Many engaged

in these branches of industry can speak from experience as to the injurious effects occasioned by the clearing of hills and slopes where the forests formerly sheltered the surrounding agricultural lands.

The localities where it is most advantageous to maintain a close solid growth of timber are, as a rule, precisely those tracts of soil which it is either impossible or comparatively unprofitable to cultivate. Nature seems not only to have laid down the law to be violated only at our loss that a considerable proportion of the land shall be left clothed with forest vegetation, but at the same time to have marked out the areas to be so maintained. It is the hill tops—the steep slopes and declivities—the thin soiled or rocky ridges which, when once the timber is destroyed, yield nothing more of value and cannot be turned to account in any other way than by restoring them to their natural condition. There are other waste or inferior tracts which may by planted to advantage, but it is more especially the higher and commanding localities which are characterized by the minimum of value when cleared and the greatest utility if kept in forest.

Natural Reproduction.

Where there is a vigorous second-growth springing up to take the place of the timber destroyed by the axe or fire—all that needs to be done is to assist and not restrain the process. The greatest drawback to the course of natural reforestation which would otherwise gradually restore the natural growth upon large tracts of waste land in the settled parts of the Province is the desire of the owners, to turn these unprofitable portions of their farms to some account by using them for pasturing stock. This is emphatically a penny-wise and pound-foolish course. The farmer, who lets his cattle range through the wood lot or over waste land which ought to be growing timber, is injuring the future value of his farm to many times the extent of the temporary gain. The cattle destroy the seedlings and the younger trees by browsing on the leaves and shoots and trampling and tearing down everything in the way of underbrush. They effectually prevent any new growth taking the place of the mature trees as the latter decay or are cut down for fuel, and the porous forest floor being trodden hard and exposed to the light, owing to the gaps in the cover, loses its distinctive character and gives place to a growth of sod.

Stock Must Be Fenced Out

if it is desired to secure new growth. The presence of a sod in the bush indicates that the trees are too thin in the crown, in other words are too scattered, and the blanks or open places should be filled in by transplanting, which can be done at odd times in the spring or fall at little or no expense. A new growth will not spring up naturally on a tough sod, and planting must be resorted to to secure

the required density of crown and consequent shade which will kill off the grass, making the forest floor in proper condition to send up a fresh crop of young trees. Once the forest is in good condition

THE AXE IS THE ONLY TOOL

required to keep it in that condition.

The over-ripe, dead and crooked trees should be cut out to allow room for a more profitable growth. If the underbrush comes up too thick it should be thinned out from time to time to give the survivors room. Nature would do this in time, but her process is slow, and it is profitable to assist her.

As the young seedling trees grow up they will need more light and gaps must be made in the crown canopy by taking out some of the older trees. Herein the skill of the trained forester is displayed, but anyone, by exercising his common sense, may succeed in vastly increasing the annual growth of timber on his wood lot.

It should be remembered that trees do not usually bear seed every year and in thinning out, with a view to securing a new crop of young trees from the seed in the open space, regard should be had to the presence of seed on the remaining trees.

Where it is found necessary to transplant, quite small seedlings not over a foot in height should be used, and they should be transplanted early in the spring before the "sap" has begun to flow or in the fall after it has ceased.

THE BIRCH FAMILY.

Betulaceæ.

BY A. KIRKWOOD.

The birch family consists of graceful trees and shrubs, natives of the colder regions of each hemisphere, with alternate, entire, dentate or senate, deciduous leaves. The sterile and the fertile flowers are arranged in distant aments on the same plant. The male flowers are in cylindrical, pendent tassels or aments, made up of three flowered scales on the sides or ends of the branchlets; the female in shorter, thicker aments, usually erect, of two or three flowered scales with long diverging colored stigmas. Both are made up of imbricate scales. The fruit, called a strobile, is the enlarged female ament usually more or less egg-shaped, sometimes cylindrical. The aments are formed in the summer or early autumn and remain unprotected through the winter.

The bark is thin and generally arranged in thin flakes and has astringent properties. The root is rather large with long tapering branches and numerous radicles. The wood is soft, close, and fine-grained, rather light and not durable

when exposed to alternations of dryness and moisture. Several of the birches are valuable as timber trees, most of them as fuel, and all as ornaments in the landscape. The wood, especially of the root is remarkably beautiful.

The great defect of birch timber is its proneness to decay. This may be in a degree prevented by felling the tree in summer or early autumn and immediately stripping off the bark. So long as the bark remains the sap and other moisture favorable to decay are kept in and the seasoning prevented

The birches have a great abundance of sap which is sometimes obtained in large quantities by the vigorous trees. It is sweet, with an agreeable acid taste, and forms a pleasant drink. It is said to be sometimes used with perry in the manufacture of what seems to be, while new, tolerably good champagne wine. It is also used to make vinegar. The inner bark of some species is used to give a bright orange dye. A specimen of bark contained 3.68 p,c., easily soluble, and 0.97 p. c., difficultly soluble tanning materials, yielding a good bright leather. Birch bark contains a crystalline substance termed betulin. O'Neill says the bark of the birch, or the birch-broom, has been employed in dyeing, but principally by the peasantry; but it is probable that these substances were valued on account of a small amount of astringent or tannic matter, which, with copperas, would strike shades of drab, grey or olive, and with alumina mordants would give inferior yellows. Monteath stated in the early part of the century that the small branches or bush of hard wood, oak, ash, and birch were much used for the purpose of extracting or distilling from them a liquid used at calico print works in Glasgow where there were extensive works for distilling it.

Michaux arranged the birches in two sections, one comprehending trees whose fertile aments are sessile and erect—the black, the yellow, the red, and the glandular birches; the other, those whose fertile aments are stalked and pendulous—the canoe, the white, and the common European.

Pliny describes the birch as a slender tree inhabiting the cold parts of Gaul. The branches, he says, were used for baskets and the hoops of casks; and the fasces or bundle of rods which were carried before the Roman magistrates were made of birch twigs; the use, therefore, of the weapon which in modern times was the terror of idle schoolboys, is of high classical authority.

The peculiar characteristics of the birch are, as has been remarked, lightness and elegance, qualities which are owing to the slenderness of the main stem in proportion to its height, the wiriness of the branches, and the thinness and small size of the foliage. The white birch is equally remarkable for the coloring of its bark, which is marked with brown, yellow, and silvery touches, which are very picturesque, contrasting well with the dark green hue of the leaves. The younger twigs have no such variety of color being of an uniform purple brown. The leaves are sharp-pointed, stalked, and unevenly serrated. In April and May the flowers appear in the form of drooping catkins, some of which produce stamens

only and drop off early. The fertile ones bear very small winged nuts and fall to pieces when ripe, scattering the numerous seeds. The barren catkins are formed in summer but do not expand till the fertile catkins appear in the following spring. A kind of resin exudes from the leaves and young twigs, which is highly fragrant, especially after rain or heavy dew. This resin appears to have been collected in Pliny's time; as he speaks of a *bitumen* which the tree produces. The odor arising from it is very preceptible to a person passing near a tree, and affords another reason why the birch should be planted near houses.

A variety of the birch is met with in Scotland which differs from the common species by having the shoots pendulous. This is a yet more elegant tree than the first described, and is frequently planted in parks and gardens. It possesses another advantage in being of quicker growth, and attaining a large size. Nothing can be more light and airy than its slender drooping spray, "circling like a fountain shower" those who sit beneath its branches. Although it is not much valued for its timber, still it is a useful tree. From the timber are manufactured hoops, yokes for cattle, bowls, wooden spoons and other articles in which lightness without much durability is sufficient; baskets and hurdles are often made of part of its shoots; and from its rising sap, extracted by means of openings cut into its alburnum in spring, and fermented, a kind of wine is obtained. During the seige of Hamburgh by the Russians in 1814 almost all the birch trees of the neighborhood were destroyed by the Bashkirs and other barbarian soldiers in the Russian service, by being tapped for their juice.

The wood is of comparatively little estimation where the oak, the ash, and other trees can be produced. It is used for screws for presses. In the young state it is employed for hoops, baskets, hurdles, and other country purposes, and when older, for cooperage, for which it is in considerable demand, chiefly for the fisheries. The Highlanders of Scotland make everything of it; they build their houses, make their beds, chairs, table, dishes and spoons, construct their mills, make their carts, plows, harrows, gates and fences, and even manufacture ropes of it. The branches are employed as fuel in the distillation of whiskey; the spray is used for smoking hams and herrings, for which last purpose it is preferred to every other kind of wood, and the bark is used for tanning leather.

In Russia an oil is extracted from the birch which is used in the preparation of Russian leather. Owing to the presence of this oil, books bound in Russian leather are not liable to become mouldy; they also prevent mouldiness in books bound in other leather which happen to be near them.

The pendulous variety, not only grows to be a larger and finer tree than the common kind, but is the most graceful of any of the species. Its branches do not assume their pendulous character till the age of 15 or 16, but it can always be distinguished from the common sorts in the young state by the branches being rough-while those of the others are smooth.

The birch is the most easily cultivated of deciduous forest trees. Its seeds are ripe in September or October, and may be sown immediately in the nursery, or kept in a dry airy place until the following spring. They should then be sown in a light and moderately fertile soil, and be covered in the slightest possible degree, by a light roller, or the back of a shovel; and it is well to cover the ground with a little litter, so as to preserve it moist and cool. The plants will come up in profusion in May or June, and in the following season be transplanted to the nursery rows. But the birch may likewise be propagated from seeds sown in the places where they are finally to grow. The ground may be prepared for their réception as for a crop of any kind, and the seeds be covered by a roller or bush-harrow; or else they may be sown along with a crop of grain, in the manner of the seeds of the clovers and grasses. Thus simply may the birch be propagated, and thus easily may we clothe our hills with a verdure which art cannot imitate. We do not need to wait a long life before our desires are fulfilled. In a few years the fragrant birch springs up, extirpates the dusky growth below, and mantles the crags as if by magic.

The growth of all the birches is so ready and rapid that they make perhaps the very best nurses for almost all other trees.

Manpertins, when travelling through Lapland, passed through extensive forests of this tree, and he says that the fallen birches lying among the moss often rendered the road almost impassable. On examining the trunks he found that time had reduced the wood to dust without occasioning the smallest change in the bark. Such a sight would readily suggest to the people of the North the use of this bark on the roofs of houses: and in Sweden the bark is covered with a layer of earth, on which grass and other plants are grown. Large thick pieces of bark easily separate from the wood, and form hollow cylinders, which, after being flattened, are worn by the Laplanders on their shoulders to protect them from the rain. The inhabitants of Sweden, after burning the bark to a certain degree, use it as a cement for broken china and earthen-ware. A curious use for the birch is found in Lapland, Norway, Poland, Russia, and Sweden, where the twigs are gathered in small bundles, dried with their leaves on, and used in vapor baths for beating bathers' backs to induce perspiration.

The Russians believe that the birch is never struck by lightning. They are very fond of the tree; and though immense tracts of land are covered with its wild growth, yet they surround their dwellings with its graceful boughs; and in the neighborhood of Moscow, it is the prevailing tree of the landscape. Seyden, in his pretty version of the Finland mother's song, records another use of a portion of this tree in the North:—

"Sweet bird of the meadow, oh! soft be thy rest,
Thy mother will wake thee at morn from thy nest;
She has made a soft nest, little Red-breast, for thee,
Of the leaves of the Birch, and the bark of the tree.
Then sooth thee, sweet bird of my bosom, once more;
'Tis Sleep, little infant, that stands at thy door."

The Highlanders cut the knobs on the birch trees, which they call "Witches Knobs" into bowls, and an old Scottish proverb, which says of a very poor man that he is" Bare as a Birk at Yule e'en," seems to allude to the old custom of stripping the bark of the tree to make the Yule or Christmas log.

In some places the birch is tapped in Spring, and the sap drawn out to make birch wine. The proportion of sugar may be varied according to the taste or intention of the brewer: but, in general a pound of sugar is thought to be the proper allowance for a gallon of sap. The sap and sugar must be thoroughly united by a heat just sufficient to make them boil: but long boiling can answer no good purpose: on the contrary, it renders the liquor less disposed to ferment kindly, and likewise deprives it of a considerable part of the peculiar fragrance and flavor of the tree from whence it was taken. It should therefore be carefully remembered, that the the sole purpose of boiling this liquor is, to make a thorough dissolution of the sugar in it. Some people substitute honey instead of sugar. With regard to various spices ordered by different writers, they must be left to the taste and opinion of the maker.

It is generally found necessary in order to ferment this liquor, to put into it a little yeast, a bit of dough, or thin toast of leavened bread, after which it is treated in all respects like other vinous liquors.

The Paper or Canoe Birch.

Betula Papyrifera.

The paper birch is a northern tree, being found as far north as latitude 65°, It grows naturally on river banks and in moist, deep soil flourishing in almost any situation, but never attaining a very large size. It is a picturesque tree: the points of light from its white trunk producing a brilliant effect in the midst of its soft but glittering foliage, hanging, as we often see it, over some mountain stream, or sweeping up with a graceful curve from the side of its steep bank.*

The leaves are alternate on the growing branches, on tapering footstalks, of one-quarter or one-third of their length. They are from two to four inches long, and sometimes more than two wide, often equilateral, broad, oblong-egg-shaped, tapering to a point, irregularly, doubly, and coarsely, but sharply serrate: smooth above, roughly reticulated beneath: dotted above and beneath when young with resinous, silvery dots, and downy about the axils of the veins beneath. They resemble the leaves of the common gray birch, but are broader towards the extremity.

The male flowers are in pendulous catkins, three or four inches long, with the scales very slightly fringed. The fertile catkins are longer than in the other birches, and have their scales three-lobed at base, and also slightly ciliate. The few stigmas are longer than in the white birch, and give the slender aments a rougher appearance. When mature the fertile catkins are cylindrical, an inch and a

* Emerson.

quarter or half long, pendulous on slender stalks half an inch in length. They are made up of imbricated, three lobed scales, the middle lobe acute, the side lobes orbicular, enclosing three ovate seeds with broad, thin, membranaceous wings on persistent styles, resembling a winged insect with antennae. The fruit, like that of the other birches, is full grown in July, at which time the male catkins of the next year begin to show themselves at the ends of the branches.

From the tough, incorruptible bark of the canoe birch, were formed the canoes of the former inhabitants of this country, models of ingenuity and taste so admirably adapted, by their lightness and shape to the interrupted navigation of the savage. Michaux has given an interesting account of the various uses of the bark.:—

"In Canada, and in the District of Maine, the country people place large pieces of it immediately below the shingles of the roof, to form a more impenetrable covering for their houses; baskets, boxes, and portfolios are made of it, which are sometimes embroidered with silk of different colours; divided into very thin sheets, it forms a substitute for paper: and, placed between the soles of the shoes, and in the crown of the hat it is a defence against humidity, but the most important purpose to which it is applied, and one in which it is replaced by the bark of no other tree, is the construction of canoes. To procure proper pieces, the largest and smoothest trunks are selected in the spring, two circular incisions are made, several feet apart, and two longitudinal ones on opposite sides of the tree: after which, by introducing a wooden wedge, the bark is easily detached. These plates are usually ten or twelve feet long, and two feet nine inches broad. To form the canoe, they are stitched together with fibrous roots of the white spruce, about the size of a quill, which are deprived of the bark, split, and suppled in water. The seams are coated with resin of the Balm of Gilead. Great use is made of these canoes by the savages and by the French Canadians, in their long journeys into the interior of the country; they are very light, and are easily transported on the shoulders from one lake or river to another, which is called the *portage*. A canoe calculated for four persons with their baggage, weighs from forty to fifty pounds: some of them are made to carry fifteen passengers"

"In the settlements of the Hudson's Bay Company, tents are made of the bark of this tree, which, for that purpose, is cut into pieces twelve feet long and four feet wide. These are sewed together by threads made of the white spruce roots already mentioned: and so rapidly is a tent put up, that a circular one of twenty feet in diameter, and ten feet high, does not occupy more than half an hour in pitching. The utility of these 'rind tents', as they are called is acknowledged by every traveler and hunter in Canada. They are used throughout the whole year, but, during the hot months of June, July, and August, they are found particularly comfortable."

According to Pliny, the celebrated books which Numa Pompilius composed seven hundred years B. C., and which were buried with him, were written on the bark of the birch-tree.

The heart-wood of the canoe birch has a reddish hue. The sap wood is beautifully white. It is soft, smooth, takes a fine polish, with a pearly lustre, and is therefore fitted for ornamental works. But it is perishable when exposed to alterations of moisture, and not remarkable for strength. A canoe birch cut in summer and kept constantly from the weather, is very durable, and becomes very hard. It is used in the manufacture of chairs, and in other cabinet work. A portion taken from a part of the trunk from which a large branch issues, makes abeautifully feathered and variegated surface for the front of a bureau, or for a table. It is also used for hat-blocks, and for many uses of the turner. The wood of its root is extremely beautiful.

Formerly, when large old trees of this species were more common, the bark was used in the manner described above by Michaux, being placed beneath the shingles, many old buildings are still found covered in this way. Carefully laid, it makes a covering impenetrable to rain, and a most effectual screen against heat and cold; and it is almost imperishable.

Lowell says of the bark of the celebrated Canadian birch-tree:—

"Thou art the go-between of rustic lovers.
Thy white bark has their secrets in its keeping."

The Black Birch, Sweet Birch or Cherry Birch.

Betula lenta.

The black birch is easily distinguished by the dark color of its bark, and from this obtains the name by which it is almost universally known. From its resemblance, in bark and leaves, to a cherry tree it is also sometimes called the cherry birch; and, from the agreeable spicy odor and taste of the leaves and inner bark, it often has the name of sweet birch, or fragrant birch, as in Bryant's lines on the murdered traveller:

"The fragrant birch above him hung her tassels in the sky,
And many a vernal blossom sprung and nodded careless by."

The black birch is the most beautiful, and, for the useful properties of its wood, the most valuable of its family. Early in spring it expands its long aments which hang like tassels of purple and gold, and continue for many days shedding beauty and fragrance, at a time when few other objects feel the kindly influences of the season: and it is amongst the first trees to put forth its leaves. In the forest, in the rich, cool, moist soil which it prefers, on mountain sides, or the banks of streams, it often attains the height of sixty or seventy feet. On an open plain growing by itself, it is a round-headed tree, and from the length and slen-

derness of its somewhat tortuous branches, they become pendulous, forming the most graceful of the weeping trees. The light, winged seed often lodges and vegetates in crannies of almost inaccessible rocks, and thence pushes down its roots, over the bare rock, to a considerable distance, in search of a foothold in the soil. It is often, too, seen growing from the top of the mass of soil and stones adhering to the roots of an old, upturned tree.

The trunk in small trees is covered with a smooth, dark purple bark, entire, or, in larger trees, with distant chinks. On very old trunks, it is broken into horizontal, straight-edged plates, which become loose at the end, and scale off in broad sheets. The spray is very slender, of a reddish bronze color, gradually deepening to a very dark polished bronze, almost black, dotted with conspicuous gray dots. The buds are conical, and pointed. The leaves are two or three inches long, and one or one and a half wide, oblong-ovate, heart-shaped at base, tapering to a point, finely and sharply but irregularly serrate, smooth and somewhat impressed on the veins above, paler, and with the veins straight and prominent and hairy beneath, the under surface dotted with numerous resinous but not viscid dots. They are on short, curved foot-stalks, sometimes a little hairy. On the lower parts of the branches, they are in twos: towards the ends, alternate. In autumn, they assume various shades of ochreous yellow, or pale orange, or an extremely delicate yellow, lighter than orange, nearly a lemon color.

The male flowers are on cylindrical, pendulous catkins, from two to four inches long, and one quarter of an inch wide, set with loosely arranged scales Each flower is within a broad-ovate, shield-like pointed, brown scale, to which are attached two smaller ones below, and within three thinner, bearded scales, supporting twelve stamens with single-lobed anthers, growing by twos on pedicels, with often a slender scale at the base of each. These catkins are towards the end of the branches, occupying each the place of a pair of leaves.

The female flowers are on smaller catkins, about half an inch long, and one-eighth in diameter, lower on the branches with two leaves at the base of each. The scales are close set, imbricate, small, green, rounded or pointed at the end, with an ear-like lobe on each side of the base. Within each are three pairs of ovaries, with awl-shaped stigmas.

The fruit is erect, nearly sessile, elliptical, or cylindrical, with rounded ends, an inch or somewhat less long, and half an inch thick, made up of shining resinous scales of three equal lobes, closely imbricated: and having three seeds, ovate and with broad wings, within each.

The wood is easily wrought: and as it has strength, firmness, and durability, it is much used in the arts. It has a delicate rose color, which deepens from exposure, but never becomes dark: and the difference between the annual circles of different degrees of maturity giving a rich, clouded, or, as it is technically called landscape appearance. It is in request for the panels in the foot and head-

boards of bedsteads, and in other cabinet furniture. It is sometimes used to make yokes, which proves its strength to be considerable. It is also used for joists, for bedsteads, and for chairs, for which it is a beautiful material, though it does not bend so well as yellow birch. Small tubs are made of it, and it is sometimes used for back-boards in carriages.

The black birch is excellent for fuel, next, indeed, to the rock maple. A decoction of the bark, with copperas, is used for coloring woollen a beautiful and permanent drab, bordering on wine color. This birch, as well as the yellow, yields a very large quantity of sap: more, probably, than any other kind of tree.

ENTOMOLOGY.

By W. Brodie.

The Tussock Moth. (*Orgyia leucostigma*)

History.

During the summers of 1857 and 1858 many of the orchards in the counties of York and Ontario were severly injured by the larvæ of this moth. It was popularly named, "the canker worm," though bearing little resemblance to the real canker worm, except that in both species the females are wingless. The orgyia larvæ were also often mistaken for those of the Tent Caterpillar, *Clisiocampa Americana*. No doubt the orgyia had been on the increase some years previously to 1858, but in that year they reached a maximum and then suddenly disappeared, being quite unknown in 1860, nor since then has it been noticeably injurious to fruit trees in these counties. It was observed on this 1858 occasion as on every similar occurence since, that the orchards injured by the orgyia were usually isolated—often seperated by several miles—and that no larvæ were seen on intermediate farms. In 1865, the ornamental trees in Toronto were partially denuded of leaves by orgyia larvæ. The horse-chestnut trees in the College avenues were about as badly stripped as they ever have been since, and up Yonge Street as far as Richmond Hill, and to the east and west of the city horse-chestnut and poplar trees were noticeably injured, but in the summer of 1867, one might have searched for hours without finding one orgyia larva. In the summer of 1870 they were not uncommon, and reached a maximum in 1872 and after 1873 they disappeared. At this date, 1872, they were numerous in the towns of Whitby, Hamilton, Newmarket and in and around Owen Sound, horse-chestnut, poplar, mountain ash and other trees were defoliated to a large extent. A brief notice of this outbreak was published in the Report of the Agricultural Commission, 1881. The years 1883, 1889 and 1896 were also years of maximum injury to ornamen-

tal trees in Toronto by orgyia larvæ. Something of the same periodicity has been observed in other cities and towns in Ontario, but the records are few and meagre and mostly in local newspapers. A few papers, on peculiar habits of the orgyia, were read before the Biological Society, but generally these outbreaks attracted little attention. However it was shewn that the years of maximum in Montreal did not correspond to the years of maximum in Toronto.

Food Plants.

The orgyia larvæ seem to have a preference for the horse-chestnut, *Æsculus hippocastanum*, especially trees growing in cities and towns, where they are not far apart. The Lombardy poplar, *Populus dilitata*, an introduced tree, and about as common as the horse-chestnut, is also a favorite food tree. I have found the larvæ feeding on our native poplars, *Populus tremuloides*, *Populus grandidentata* and *Populus balsamifera*. No doubt they will feed indiscriminately on our native willows, and I have found them feeding on *Salix longifolia*, *Salix discolor*, *Salix humulis*, *Salix sericea* and *Salix cordata*.

In 1872 this insect pest was more or less common over a large portion of Ontario, and in country places fed largely on native poplars and willows. In the town of Owen Sound and through the surrounding townships these trees were rather severely injured. It, has, from an early period, been recorded as a pest to cultivated fruit trees, apple, plum and cherry, but during the last twenty-five years it has done very little injury to orchards in Ontario. But I have found the larvæ feeding on our native wild cherries, *Prunus Americana*, *Prunus Pennsylvanica*, *Prunus virginiana*, *Prunus serotina*, *Pyrus alleuparia*, and I am told it has been found feeding on the wild rose, *Rosa blanda*, and on *Spiræa salicifolia*. I have repeatedly found the larvæ feeding on June berry, *Amelanchier Canadensis*, and it is pretty certain they will readily feed on several other rosaceous plants. I have never yet found orgyia larvæ feeding on mature forest trees, they seem to select young or second growth trees. I have found them feeding on white oak, *Quercus alba*, on red oak, *Quercus rubra*, on three species of maple, *Acer saccharinum*, *Acer spicatum* and *Acer dasycarpum*, as also on the box elder, *Negundo aceroides*. The basswood, *Tilia Americana*, is also a favorite food plant. They feed also on our two native elms, *Ulmus Americana* and *Ulmus racemosa*. The common elder, *Sambucus Canadensis*, arrow-wood, *Viburnum acerifolium*, witch-hazel, *Hamamelis virginiana*.

Of herbaceous plants, I have found them feeding on hemp, *Cannabis sativa*, on lady's thumb, *Polygonum persicaria*. on plantain, *Plantago major*, on bitter dock, *Rumex obtusifolius*, and on burdock, *Arctium lappa*. The larvæ I found feeding on *C. sativa*, and on *P. persicaria*, fed on these plants for several days. They were about half grown and each one ate about a square inch of leaf, but although they left these plants and took to plum sprouts, which were growing close by, I have no doubt the larvæ would have matured on them.

Life History.

This very common and well known insect has figured largely in American entomological literature from an early date, but all along there has been a good deal of transcribing and repeating of old and worthless matter, many reports being made up almost entirely of very poor illustrations from old and worn electrotypes, and it is but very lately that anything either valuable or original, relating to *O. leucostigma*, has been published. But anyway the life history of this insect is quite familiar to entomologists and requires but a brief notice here. The larvæ begin to emerge late in April and continue emerging to the end of June: from many years observations I have found these dates to be the extremes of the seasonal emergence, covering a period of two months, and no doubt this range has given countenance to the erroneous statement that the species is double brooded in Ontario.

Soon after emerging the larvæ begin to seek for food: they can travel at the rate of one foot in six minutes, or about one hundred feet in ten hours, and can keep this up for a couple of days. I have kept them 48 hours without food and when put on a food plant they at once began to eat.

Until after the second moult they feed on the under side of the leaf without disfiguring it, and are not readily seen except by practical entomologists, but soon after the second moult they begin to feed on the edge of the leaf and usually finish one before moving to another. At this stage, if they are feeding on low herbage and a food tree standing near they will leave the low food plants and ascend the tree. But otherwise unless there is a scarcity of food they do not readily leave the food tree. Nor do the orgyia larvæ, like the larvæ of the Gipsy moth, *Porthetria dispar*, and the tent caterpillar, *Clisiocampa Americana* congregate towards the lower part of the tree trunks during any part of the day, but any movement made is towards the upper branches and in search of food. They remain with great tenacity to their food trees throughout their larval life, perhaps more so than the larvæ of most other lepidopterous insects, very few being shaken down by the severest wind storms, perhaps not more than than five per cent fall from or leave their food tree until mature. A full grown orgyia larvæ weighs ten grains, and each one during the feeding stage will consume or destroy more than half an ounce of leaf substance.

The larvæ, which emerged earliest in the season, will be mature and begin to spin cocoons about the middle of July, but late larvæ may be found feeding up to the middle of August. About 25 per cent spin cocoons on the upper branches and twigs of the food tree—very rarely on leaves—about 50 per cent move down towards the bases of the larger branches and trunks and spin up in crevices of the bark, and about 25 per cent. leave the food tree, spin cocoons and pupate on fences, the walls of old buildings, or on piles of rubbish. Careful observations seem to favor the statement made by some entomologists that the great majority

of the larvæ which leave the food tree are either parasitized or are males. The earliest imagoes emerge from their cocoons about the end of July, the latest towards the end of August.

The wingless females attach themselves with their claws to the cocoons, out of which they have emerged and so remain during their very brief life. Soon after fertilization by the winged males they begin to oviposit, usually within a few hours, but I have known several instances in which only a few minutes elapsed between the exit of the male and the commencement of ovipositing, which is usually completed in about six hours. The egg masses, containing about 260 eggs, are glued to the cocoons and covered with a glutinous substance insoluable in water, and remain in this condition during the winter. No orgyia larvæ, pupæ nor imagoes ever survive the winter. It is therefore very evident that all cocoons not bearing eggs masses that may be found in the fall, during the winter or in the spring season, are either empty or contain the pupæ of parasites.

Distribution.

No distribution of the species can possibly occur from the flightless females, but it may occur from the accidental removal of egg masses. This may be in many ways, birds have been accused, especially European sparrows, of utilizing cocoons loaded with egg masses in nest building, and again it may be from the few female larvæ which leave the food tree when mature, although these do not usually travel more than about ten yards. But of course in any case of the food supply running short—the food tree denuded of leaves—all the larvæ, under the final moult, will leave and seek another food plant, and in such cases they will travel considerable distances, and many careful observations seem to favor the statement that this is the common and natural mode of distribution, and of course immature larvæ may be carried long distances on public road conveyances and on railway trains.

Rate of Increase.

Several conflicting and inaccurate statements having been published as to the number of eggs laid by one female, a collection of sixty egg masses was made, November 1897, with a view of settling the question with some degree of accuracy. These were divided into three lots of twenty each, large, medium, and small, and carefully counted. In the large lot the extremes were 300–317 and the average 307 eggs; in the medium the extremes were 219–243, and the average 229 eggs; in the small lot the extremes were 173–190, and the average 184 eggs, or on the whole lot of 60 egg masses, an average of 260 eggs, not by any means a very large increase among insects, and showing the absurdity of the "thousands" estimate, and suggesting grave doubt as the accuracy of the "700" estimate.

Natural Enemies.

The only bird known to be destructive to *O. leucostigma* is the chickadee, *Parus atricapillus*, which feeds on the eggs during the winter, but as it seems impossible to induce the chickadee to frequent cities and towns, they can be of service only in localities near a forest.

A large number of insect parasites prey on the larvæ of the orgyia. A Washington report (a study of insect parasitism, 1897,) enumerates twenty-one species of primary parasites, twenty-five species of secondary and ten species of tertiary, with some probability of a quarternary species: a most interesting and complicated system of parasitism on one host insect.

The study of the parasitism of this insect has not been pursued in Ontario to any extent, very few primary and no hyperparasites have ever been recorded so far as I remember.

But, doubtless, investigation would prove that we have most of the species recorded as occurring at Washington.

The following hymenopterous species have been bred from orgyia larvæ and pupæ in Ontario: *Pimpla inquisitor, Pimpla annulipes, Pimpla conquisitor, Meteorus communis, Limneria valida, Chalsis ovato, Apanteles distinctus, Cratotechus orgyiæ.*

And of the dipterous family, *Tachinidæ*, three species have been bred, *Frontina frenchii, Tachina mella*, and *Euphorocera claripennis*. the last doubtful.

Any one of these species, if not checked by secondary parasites, nor by destroying orgyia in the larval form, would prove a very formidable foe to the leaf eating species.

Not Double Brooded.

With the view of determining some questioned facts in regard to the dates of emergence, *O. leucostigma* larvæ and their parasites, and also to determine if a second brood would mature in Ontario, a collection of fifty egg masses and 1,000 cocoons, on which there were no egg masses, was made August 1st, 1896. These egg masses and cocoons were divided into two equal lots and placed in separate glass rearing jars. One of these jars—No. 1,—was placed in a lightly shaded situation in a garden where the temperature was fairly uniform, and remained undisturbed until October 15th, without the emergence of either larvæ or parasites. The other jar—No. 2—was placed in direct sunlight during the day and taken into a warm room during the night until October 1st. On August 8th a small parasite *Cratotechus orgyiæ* began to emerge and continued to emerge numerously until August 22nd. On August 18th a parasite, *Pimpla conquisitor*, began to emerge, and continued to emerge until August 28th. On August 20th, larvæ of *O. leucostigma* began to emerge, and continued to emerge sparingly until September 21st. On which date seventeen orgyia larvæ emerged. On Septem-

ber 7th the orgyia larvæ which had first emerged—August 20th—underwent the first moult, and on September 18th the second moult. September 20th, orgyia larvæ sickly, dying, some dead. September 25th, the seventeen orgyia larvæ, which emerged September 21st, feeding feebly on under side of leaves. October 1st, the larvæ which emerged on September 21st, not feeding. October 5th, only eight larvæ alive out of the whole lot of over 500. October 6th, not feeding, sickly, trying to moult. October 8th, all dead, not one got through the third moult.

The orgyia larvæ, as soon as they emerged, were placed on healthy young plum trees, growing in a sheltered garden, on which they remained and fed until they died. They did not die of the common bacterological disease, which sometimes sweeps off myriads of full grown larvæ, nor were they killed by frost, as the temperature in the garden never went below 40° F., and delicate herbaceous plants—balsams—growing among the plum trees were untouched by frost. But it may be that the average autumn temperature is too low and perhaps autumn leaves over mature to support orgyia larval life.

These observations were reported in 1897 in the same way, commencing August 1st, and ending October 15th, with precisely the same result, the orgyia larvæ did not get through the third moult.

On October 8th, 1896, the contents of No. 2 jar were transferred to No. 1., which was put away for the winter, and early in the spring of 1897 it was placed in a shaded situation in the garden.

On April 24th, orgyia larvæ began to emerge, and continued to emerge until June 26th. On June 2nd, parasites, *Cratotechus orgyiæ* began to emerge, and continued to emerge until June 16th. On June 7th, two species of *Pimpla* and three species of primary parasites, undetermined, began to emerge, and continued to emerge until June 16th. From June 9th to June 15th two species of *Tachina* emerged. June 6th, larvæ first out have completed first moult, but still feeding on under side of leaf. July 1st, larvæ first out have completed final moult and are nearly full grown. July 10th, first spinning of cocoons July 19th, many larvæ nearly mature, sixteen cocoons to-day. July 23rd, found a large number of larvæ dead and dying on food plum tree, caused by a peculiar contagious disease. July 26th, many larvæ still feeding, some not more than half grown. July 27th, first imago of the season, many larvæ not mature. July 29th, imagoes emerging. Many larvæ still eating. Many *Tachina* larvæ have emerged from orgyia cocoons and are still emerging. July 30th, many larvæ still feeding, two orgyia have oviposited, larvæ still dying on food tree. On September 3rd all had ceased to feed, all spinning, dying or dead. From a series of careful observations it was estimated that twenty per cent. of the orgyia larvæ died on the food tree. The largest and finest looking larvæ were most subject to this bacterological disease, they ceased eating, remaining quite still on the twigs, and in about twelve hours

were dead, often hanging by the claspers from the twigs, the larval skin a sack full of filthy looking pus. On August 21st, 55 orgyia cocoons, containing pupæ, were collected and placed in a small pasteboard box. On September 8th, 11 females, one male orgyia imagoes emerged. On September 12th the remaining cocoons were examined, nine were parasatized, 34 pupæ had died of this contagious orgyia disease. On September 1st, 50 large and perfect orgyia larvæ were placed in a pasteboard box, out of this lot but one pupated. On September 7th all had died of the contagious disease. On August 23rd, 114 mature orgyia larvæ were put in a well ventilated box, a cube six inches on the side, from August 27th,—September 1st, 52 died, from September 1st,—September 5th, 27 died, the remaining 35 had spun up or partially pupated without spinning cocoons. From these on September 11th three orgyia imagoes emerged, two females, one male, six were parasitized and 26 were dead, so out of the lot of 114, 105 died of the contagious disease.

This bacterological disease has been known to occur periodically in Toronto, especially in years when the larvæ were most numerous, and no doubt has a potent effect in checking the increase of *O. leucostigma.*

Remedial Measures.

A common remedy is putting bands of some gummy substance or disks of tin around the trunks of trees affected. Quite effectual in case of the "Canker worm" or of any species in which the apterous females pupate in the ground. Useless in case of *O. leucostigma.** Spraying with poisonous solutions has been tried with very little benefit. This lessens the liability to disease and also destroys parasites. Collecting and destroying *cocoons* in fall and in spring has also been tried, a plan based on the most culpable ignorance of the life history of the insect, invariably doing much harm and never any good.

Collecting and destroying egg masses in the fall or winter season or in the spring, before the emergence of larvæ, is the only remedy so far tried which has resulted in any good. This done, say once in four or five years, or whenever the egg masses become numerous, with the aid of parasites and disease would effectually keep *O. leucostigma* in check.

THE SPRUCE GALL-LOUSE.

(*Chermes abietis.*)

In the spring of 1897 many spruce trees in and around Toronto were found to be more or less injured by a pseudo-gall insect. The galls were enlarged and

*Note by the Clerk of Forestry.

Despite the fact that a knowledge of the life history of the Tussock moth would incline one to a belief that bands around the tree trunk are useless, personal observations of this practise in Toronto has induced me to believe it has some value. Trees so treated have been immune to a far greater extent than adjoining trees with no bands. It may be that the caterpillars in moulting fall from the tree and are prevented from climbing up again by the band.

deformed buds of the previous year, usually towards the tips of the twigs. Investigation showed that these galls were formed by a small insect popularly called the spruce gall-louse, the *Chermes abietes* of entomologists. A short account of this destructive pest, as then known in Ontario, appeared in the annual report of the Clerk of Forestry for 1897. Since then it has spread with astonishing rapidity and has been detected at many points, from Peterborough to the county of Bruce, where it was lately detected by Dr. Hunter on native spruce trees in a swamp in the township of Culross. It has also been found on native spruces in Muskoka, near Utterson station. So far it would appear that unless this insect is checked by some artificial means it will soon destroy our ornamental spruce trees and hedges and, extending northwards, do immense injury to our spruce forests.

The trees already attacked by this spruce gall-louse in Ontario are the European spruce, *Picea excelsa*, the double spruce or black spruce, *Picea nigra*, the white spruce, *Picea alba*, and the balsam fir, *Abies balsamea*, and it may also be found on the hemlock, *Tsuga Canadensis*. This insect is native to Northern Europe and was introuced into the United States on imported spruce trees and thence into Ontario, or it may have been introduced here direct from Europe, as for many years there has been an annual importation of young European spruce trees into Ontario.

At Toronto the full grown insects—the producers—emerge from the galls, the scales of which open to give them exit, about August 1st. On emerging they are slightly imperfect, but in one day ample wings are developed which enable them to fly long distances. After distribution the female settles on a spruce leaf and lays—under herself—about thirty-five eggs and then dies, resting on the eggs. In about a week the young six-footed larvæ are hatched. They crawl about and find immature buds into which they burrow and of course remain quiescent during the winter. But in the following spring their presence in the bud causes it to develop into a "gall" instead of a normal twig. The lice in the galls give birth to other living lice so that about thirty individuals are found under each scale of the gall. The galls are usually irregularly spherical and often more than a half inch in diameter. When growing they are of a yellowish green color, but during the winter they assume a reddish brown tint, which they retain until the end of May, when they usually fall from the tree. This is the usual form of this gall but there is another form, not a gall, *in which the injury is done in the leaf axils.* As these insects in the feeding stage are within the gall, and the gall is perfectly water tight, so that no fluid can penetrate, poisoning is out of the question, and as in the migrating larval stage, they do not eat, poison is equally useless. Of course in this larval stage soap emulsions might be of some use, if applied abundantly at the proper time. But without any doubt the cheapest and best plan as yet tried in Ontario is to *clip*

off the galls as soon as they are noticed—say in June—and *always before the first of August*, while the producers are in the galls, and *immediately burn them up*. When a tree is too much infested to be dealt with in this way it should be cut

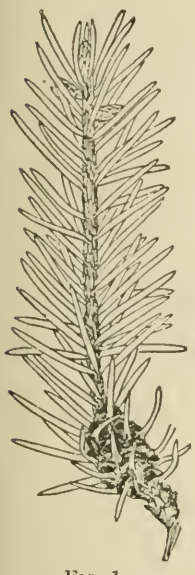

Fig. 1.

Fig. 2.

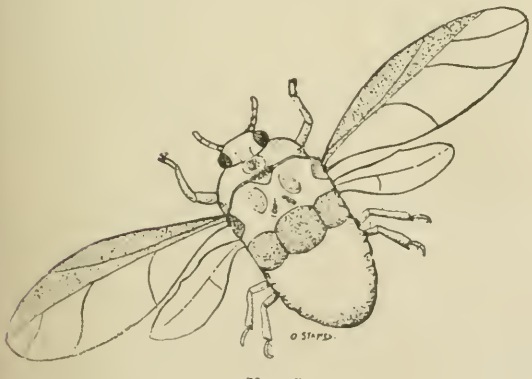

Fig. 3.

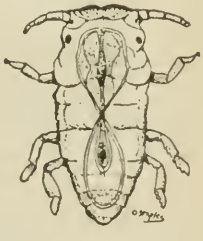

Fig. 4.

down and burnt at once. Of course there is no use in doing this after the producers are out of the galls. Several cases are known where this plan was carried out with very satisfactory results, and it is respectfully recommended that all those having spruce trees in charge should carefully see to the clearing

of their trees and the extermination of this formidable insect pest. As some of our nurseries are affected, buyers of evergreen nursery stock should be very careful to see that the young trees are perfectly free from this insect pest.

Description of Plate.

Fig. 1. Gall infested twig as usually seen in the fall season before the death of the part of the twig above the gall.

Fig. 2. Infested twig of European spruce, two-thirds natural size, collected April 16th, 1898, from a badly infested tree growing in one of the Toronto public parks, showing the parts of the twigs above the gall dead, the leaves having fallen off, the usual condition found in the spring season.

Fig. 3. Mature, winged fertile form, from a microscope mount, enlarged 25 dia., collected in September 1st, 1897. In this final stage of development they do not eat, but their ample wings enable them to fly long distances before ovipositing, and hence the alarmingly rapid distribution.

Fig. 4. Immature gall producer, from a microscope mount, enlarged 25 dia., immediately after issuing from under the scales of the gall, August 18th, 1897.

It is respectfully requested that whoever finds these galls on their trees should communicate the fact and all particulars so far as ascertained to the Bureau of Forestry.

MANUFACTURING DEVELOPMENT.

The substitution of steel for wood in the construction of large buildings was thought, at one time, to be likely to cause a great decrease in the consumption of timber. The total and sudden collapse of many of these steel buildings in the event of fire has, to some extent, put a check on this style of building, and new uses are constantly being found for forest products of various kinds. The rapid development of the manufacture of paper from wood has altered the relative values of our forest trees, making some of them, formerly of little use to us, very valuable indeed. This is notably the case with spruce, which in Ontario, south of the "Height of Land," is rarely found large enough for board timber. The seeds of the spruce germinate readily and grow so thickly in many parts of Ontario, especially in moist soil, that they attain but small diameter in a long period of growth, and because of this, lumbermen, in estimating the value of timber limits in former years, when their licence included all sorts of timber, took no account of any but pine. The rapidly increasing demand for spruce for paper, has recently caused a considerable value to be placed on many limits from which the merchantable pine has been taken. In this reference is made to the limits that were disposed of prior to 1892, since which time the spruce has been reserved by the Crown.

Domestic Fuel.

A recent development in the use of forest by-products is the use of wood charcoal for fuel for summer use in private houses. It has long been used in restaurants and hotels for some purposes to a limited extent, but so far as private houses are concerned it has been only used for kindling fires. Recently, however, it has been put up in paper sacks, for sale in small quantities and there are indications that it will be largely used for cooking in towns and cities. There are few places in the Province where it is turned out in large quantities, and as one of these is likely to require the whole out-put for iron smelting, the supply is comparatively limited The creation of a demand will soon remedy this, however, and much forest material now left in the bush for want of a market may be utilized in this way. A company with large capital has been organized at Ottawa to convert the sawdust from the big mills there into charcoal and the other products obtained from wood distillation. It is proposed to compress the sawdust into briquettes and distil them in retorts as at Deseronto. If the enterprise succeeds it will place a large amount of charcoal on the market.

Exports.

Our furniture manufacturers are doing an increasing business with Great Britain and until recently they have not been able to fill all the orders offered them from there. The same is the case with our paper mills and several large orders from over the ocean have been refused. This is being remedied however and mills have been recently equipped or are now being fitted up especially for export business.

Contracts have recently been closed for large quantities of "Excelsior" or "wood wool" and the market for this is very extensive, though the question of freight is a serious drawback.

A prominent manufacturer of shoe lasts is about opening up an extensive business in England and a Parry Sound firm manufacturing "cloth boards" (on which silk and other goods are wound) has already shipped some car loads of their goods to the same market.

The demand for white ash for carriage building cannot be supplied from Ontario, although the price offered is very high, as we have scarcely enough of this valuable wood for our own use. In connection with our increasing business with Great Britain in these lines much credit is due Mr. Harrison Watson, the Canadian Curator of the Imperial Institute who has been very active and energetic in furthering the mutual interests of the exporters and the importers.

Charcoal Iron.

In connection with our development in the use of part of our forest products formerly waste, the establishment of extensive charcoal iron furnaces at Deseronto is worthy of note as the pioneer establishment of its kind in the Province. The enterprise is being undertaken by United States capitalists who have long been engaged in the same business and the Rathbun Company are under contract for the charcoal necessary for the furnaces. A very large quantity will be needed and the rough timber from an extensive area will be required each year to supply it. This means that the Rathbun Company will be greatly interested in maintaining a constant supply of wood, tributary to their works at Deseronto and for this reason a system of scientific forestry practice is necessary for this firm.

SIXTEENTH ANNUAL REPORT

OF THE

PROVINCIAL BOARD OF HEALTH

OF ONTARIO

BEING FOR THE YEAR

1897.

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY.

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APPENDIX.

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SIXTEENTH ANNUAL REPORT

OF THE

PROVINCIAL BOARD OF HEALTH.

To His Honour the Honourable Sir Oliver Mowat, K.G.M.G., *Lieutenant-Governor of Ontario.*

May it Please Your Honour:

The Provincial Board of Health in presenting to your Honour this its sixteenth annual report has the pleasure of drawing attention to the improved conditions of the public health, as manifested in the reports transmitted from the various local boards. The infrequency, as compared with past years, of two painful and fatal affections, smallpox and diphtheria, is very marked; and although scarlatina and typhoid fever have been prevalent in a few localities, they have been by no means general through the country. The satisfactory state of public health thus indicated may, with justice, be claimed as due to the vigilance and activity of the boards of health in the several localities, guided and instructed as they are from the Provincial Board and by its active secretary.

Consumption, as reported, continues its fatal course, and unless our social and domestic habits change very much, it is to be feared that from this disease there will always exist much destruction of life. The evil may be said to be thoroughly a house disease, and until there comes to be a general and well settled conviction on this point, a conviction that consumption owes its prevalence to house infection and not to heredity, due means will hardly be taken to prevent its communication. Homes and hospitals for consumptives are good in a measure, but the agents of consumption are so abundant, that such institutions cannot have at once a very appreciable effect in diminishing the extent of the malady. The discipline of the "Hospital for Consumptives" will scarcely be maintained in the private house.

Scarlatina has appeared in some localities and the cases have not, in these places, been few, but the disease has not manifested any great malignity.

Typhoid fever has also had its subjects but its victims have been comparatively rare. Apart from such suffering as may have been associated with it, there is an interest connected with this malady which should always be kept in view, that is, the necessity of pure water for domestic use, as the best preventative. The malady is "water borne," and if all who communicate with, or live in a neighborhood having the benefit of pure water, there will be little if any, typhoid.

The Board has held its four stated annual meetings and in addition one special meeting, this last called on the 10th August, having been rendered necessary for the consideration of certain sewerage operations at Hamilton and Stratford, which had to be proceeded with without delay.

The Appendix to this report will show at large, in what the duties of the Board have consisted during the year. Some of those were satisfactorily dealt with by correspondence, while in others local investigation, by committees of the Board, or by the secretary alone, has been deemed to be necessary.

Nine applications regarding the sewerage of certain cities and towns were examined, discussed and approved of, all of them with certain provisos tending to improvement of the schemes submitted.

There were three communications regarding the enlargement of cemeteries and their possible effect on the sanitary conditions of the neighborhoods interested.

Advice was asked from a number of cities and towns regarding meat inspection and milk inspection, the latter in connection with the "tuberculin test."

Several serious complaints were made regarding nuisances. One on examination by the Board's committee was found to be groundless. Two were discussed and investigation ordered; in a fourth, after investigation in two instances by committee, sworn testimony being taken on the second occasion, the nuisance was abated.

Several applications for approval of public waterworks systems were granted with provisos.

The Board also occupied itself with a discussion on ventilation of public buildings which was based upon a report of its committee on the subject The report, in copy was ordered to be transmitted to the Minister of Education, and to three gentlemen in the United States who were interested in the question, and the committee was instructed to co-operate with other public boards in this matter.

A discussion was held on the typhoid fever outbreak in Goderich—the medical health officer of Goderich being present and taking part—which occurred early in the year. In connection with the report of the committee on epidemics, papers were read on formaldehyde disinfection by Dr. Cassidy and Mr. J. J. McKenzie, and the Board listened to an address by Dr. Sheard of Toronto on practical disinfection and the difficulties attending it. There was also correspondence read regarding "duty" on formaldehyde disinfectors. The Minister of Customs has allowed apparatus to be brought in free if for public use. On the

subjects of rabies the report of the committee on epidemics was presented and adopted and instructions were given to the committee to prepare regulations regarding the matter.

These items constitute the more important portion of the work of the Provincial Board of Health during the year, apart from the routine work of the secretary in dealing with the multifarious subjects dealt with either by correspondence or by personal investigation. It is hoped that the endeavours of the Board may obtain your Honour's approbation.

Respectfully submitted,

J. D. MACDONALD,
Chairman.

PART I.

PART I.

CHAPTER I.

ANNUAL REPORT OF THE PROVINCIAL BOARD OF HEALTH.

Report of the Secretary.

The continued immunity from the prevalence of contagious disease which has marked the history of the several past years in Ontario has been so frequently referred to in the introductory chapter of the annual reports of your secretary, that the remark would seem to savor either of the unreal or the merely perfunctory. But nevertheless, it must again be asserted by referring those who might be inclined to question the statement to the annual reports published by the Registrar-General, wherein every death returned from the 800 municipalities in Ontario is tabulated and classified. The following table, which exhibits in quinquennial periods the total deaths from the several contagious diseases, taken from that report for 1896, must be considered to fully substantiate the remarks which have from time to time been made. The absolute percentage decrease, as shown by the figures, is given without eliminating the further percentage of decrease with an increasing population. The first period is represented by 100 per cent.:

Table of Deaths in the Three Five year Periods.

—	—	Smallpox.	Scarlatina.	Diphtheria.	Typhoid.
1st period	1882-1886	128	1,929	5,028	3,027
2nd period.....	1887-1891	16	650	4,774	3,060
3rd period.....	1892-1896	7	993	4,774	1,642

It may be stated that the inclusion of all deaths from croup with those due to diphtheria, in the third quinquennium makes the falling off in the last period probably less than it comparatively should be:

—	—	Smallpox.	Scarlatina.	Diphtheria.	Typhoid.
		per cent.	per cent.	per cent.	per cent.
1st period	1882-1886	100	100	100	100
2nd period.....	1887-1891	88	67	6	No decrease.
3rd period..	1892-1896	93	50	6	46

In view of so satisfactory a statement it becomes of much interest and importance to review at the end of the third quinquennium some of the chief factors that have been instrumental in producing so remarkable an improvement in the public health as regards contagious diseases.

An examination of the annual reports of the several years of this period very well indicates the stages in the progress of the work. The report of 1882 outlines the extended efforts of the newly organized Provincial Board of Health to inform itself as to the methods of organization and character of the work of the public health departments of European governments and of those of the several states in the American Union. A very considerable collection of public health reports and books on sanitary subjects were added to the library of the Board, and as much information as possible was collected as to the extent of the work of any municipal sanitary committees then existing in the Province.

On the other hand, the Provincial Board at once commenced the work of dissemination of sanitary information through every means within its power. Pamphlets on "How to Check the Spread of Contagious Diseases," "Aid to the Drowning," etc., were very generally distributed, and arrangements were made with a considerable number of physicians to report the week's cases of contagious disease occurring within their district. From these a "Weekly Health Bulletin" was prepared and distributed to the weekly reporters and public libraries, with the result of drawing public attention very positively to public health matters. The newspaper press were notably instrumental in distributing the information in such bulletins, while arrangements were made with Mechanics' Institutes, school authorities and municipal authorities for public health lectures and sanitary conventions. Indeed, a reference to some of the earlier reports shows a very notable part of the Board's publications to have been the series of papers read at such sanitary meetings, and their perusal indicates how the broader, if less scientific, phases of public health work had already taken a strong hold of the sanitary workers of that time.

The following are the titles of some of the papers:

"Aims and Objects of Sanitary Conventions."
"Adulteration of Food."
"Contamination of Drinking Water."
"Heating and Ventilation of Buildings."
"The Public Schools and the Public Health."
"Prevention and Restriction of Controllable Diseases."
"The Typhoid Plant, its Nature and Favorite Soil."
"The Province of Sanitary Journalism."
"The Requisites of any Good Sanitary System."
"Infectious Diseases in Schools."
"Dams and their Influences on Health."
"The Hygienic Condition of Rural Schools."
"Why so Many People Die of Consumption."
"State Medicine, Ancient, Mediæval and Modern."
"Unsanitary Conditions, the Causes of Malignant Epidemics."

These are some of the principal papers which appear in those early records, and a perusal of them in the light of present-day knowledge forces real admiration for the accurate ideas and correct lines upon which our sanitarians of fifteen years ago constructed their arguments. It is to the broad-minded and public-spirited citizens of fifteen years ago that this province owes a debt of gratitude for their ungrudging efforts on behalf of the public health, and it is with pleasure that I recall in this place the names of some who no longer are with us, or others whose busy lives have forced them at times unwillingly to leave the work to those boards and officials who have now definite health duties with corresponding powers laid upon them.

It seems not improper in this third quinquennial *resumé* of work done—in a year, that of the Diamond Jubilee of Her Gracious Majesty, marked in many ways as an *annus mirabilis*,—that your secretary should recall names to your recollection, not only from the pardonable feeling of *camaraderie* existing in every liberal profession, but also from the personal sentiments of love and regard he holds for many who have during these fifteen years of his official duties, been sources of inspiration and encouragement in the often difficult tasks which have confronted the Board.

"Forsan et hæc olim meminisse juvabit."

I recall, as I remember them, those who have "crossed the bar." Some of these were members of this Board, and in a very marked and unusual degree, one may say of each of them, "*vir propositi ingenii, audax, pertinax.*" Two of these were members of the Board as first organized—Dr. H. P. Yeomans, B.A., of Mount Forest, and Dr. Francis Rae, of Oshawa. Dr. Yeomans (obiit, 1890) was a gentleman of true scholarship and broad information. Always a student, though engaged for years in a large medical practice, largely rural, he seems to have garnered information from many sources Recalling but two of his contributions, there is the report on "School Hygiene," prepared in 1887, and that on "Nuisances arising from Cheese Factories and some proposed Remedies therefor." The first of these is one of the most important papers prepared by the Board on this subject, and like the second, displays most admirably the patient manner the writer possessed in dealing with facts in order to arrive at correct conclusions. Dr. Francis Rae (obiit, 1896), seems yet scarcely separated from us. A friend of all, generous in his judgment of everyone, the confidant of all his patients, he represented the ideal family physician, and withal the friend of the public. As regards his work on the Board, it was ever characterized by that splendid judgment which his long. intimate and personal knowledge of municipal matters had cultivated. Too constantly occupied with such affairs to be a close student, nevertheless in addition to his constant advice in connection with the Board's deliberations, his personal labors are embalmed in a notable contribution on "Poisons" in the report of 1886-7.

Dr. H. M. Mackay, of Woodstock (obiit, 1890), a member of the Board for two years, had, nevertheless, been a public health man for at least as many years as the Board had existed. A large general practitioner, the respected consultant of a wide area of country, his high moral qualities had from the first forced upon him the consideration of those sanitary problems which are constantly presenting themselves to the observant practitioner in his daily work.

To him is essentially due one of the first public water supplies of this province, as well as the inauguration of the general system of sewerage of Woodstock.

Dr. Egerton Griffin (obiit, 1897), of Brantford, may easily claim the position of *primus inter pares* amongst his contemporaries, the working medical officers of the province, not in his ideals necessarily, but in the happy distinction he gained of seeing almost everyone of his progressive schemes for the sanitation of his own city become an accomplished fact within his lifetime. Fortunate in the scene of his efforts, a progressive city with a population homogeneous and educated, his mature experience in public matters, social, educational and municipal; his large freedom from the wearing cares of a general medical practice, and possessing that *tactus eruditus* by which he could so well estimate the tension of the public pulse, all combined with his untiring energy in, and love for, his work, to give him that proud pre-eminence which I feel sure will be yielded to him by every sanitarian in Ontario. With no public water supply, without

a sewer in the city, without a city hospital, with no scavenger system, and the total previous absence of any measures to deal with contagious diseases, Dr. Griffin was successful in establishing every one of these distinct branches of the sanitary service on a permanent and absolutely modern basis. His city has erected public monuments, but were it to appreciate a son of its soil for benefits conferred upon every citizen it would immortalize the memory of Dr. Egerton Griffin in marble or yet more enduring brass.

Mr. Alan MacDougal, C.E. (obiit, 1897), was present as an engineer and sanitary adviser in Toronto almost from the organization of the public health department of the province and of the city. He was one of the earliest to labor for the inauguration of a model plumbing by-law for Toronto, and was for a long time secretary of the Canadian Institute, and was ever in closest touch with the hierarchy of sciences, which all contribute so much to sanitary work. Without perhaps the practical or purely utilitarian capacity developed as highly as some others of his confreres, Mr. MacDougal had the essentials of the sanitarian in his very nature. Scholarly, progressive and professional in everything, the high ideals of work he labored for, his distinctive professional attainments and his closest association with all sanitarians of whatever branch of work, endear his memory to us all as one to whom the public health service of Canada owes a debt which cannot be repaid.

Such are some of the workers in the field of public medicine who have passed away, but whose names are held in loving remembrance by those who have known them best.

But if I have taken the liberty of referring to the names of those who are no longer with us, I do not forget the large number of men, whether as medical officers and sanitary inspectors, or as private citizens, who have taken a special interest in public health matters as members of local boards of health. With all the defects incident to the past methods of appointing such boards and their officers, and without alluding to the fact of the present unit of municipal sanitary organization not procuring such remuneration to medical health officers as would enable them to devote all their lives to public medicine, the results of the efforts of such workers throughout the Province, as judged by the remarkably high standard of the general health indicated by the low mortality returns, signify a most remarkable advance in the general intelligence of the public regarding public health matters, and a readiness to submit to those legal provisions, which at times press hardly on individual interests.

In the Annual Report for 1891, p. 1, a *resumé* was given of the work done in various branches of public health work by the Board during the first decade of its existence, 1882-91. It will be of interest to reproduce such with the additions of the last quinquennium.

The following classification may be said to include the principal classes of subjects which the Provincial Board has especially given its attention to; and which may be said, as far as this Province is concerned, to cover the work which to the Provincial Board of Health has seemed to come within the scope of the duties which it was especially organized to carry out:

1. Machinery of Public Health Work.
    1. Provincial Board of Health.
    2. Local Boards of Health.
    3. Association of Executive Health Officers.
    4. Councils.
    5. Boards of Trade.
    6. Citizens' Committees.

2. Collection of Sanitary Information.

1. Reports of Disease by Physicians and Local Boards.
2. Annual Reports of the Local Boards.
3. Communications from Local Boards and individuals.
4. Investigations by Committees of the Board and its Officers.
5. Reports of Foreign Health Boards.

3. Dissemination of Sanitary Information.

1. Bulletins of the Board.
2. Anuual Reports of the Board.
3. Sanitary Conventions and reports thereof.
4. Communications with Local Boards and individuals.
5. Special Investigations in different localities.

4. Health Legislation.

1. Act of Establishment of the Provincial Board of Health 1882.
2. Public Health Act of 1884.
3. Amendment of 1885 to the Health Act.
4. Amendment of 1886 to the Health Act.
5. Amendment of 1887 to the Health Act.
6. Amendment of 1889 to the Health Act.
7. Amendment of 1890 to the Health Act.
8. Amendment of 1891 to the Health Act.
9. Municipal and other special Acts referring to health matters.
10. Quarantine Laws of Canada.
11. Inter-provincial and inter-state agreements, regarding notification of outbreaks of disease.

5. Investigations into Causes of Disease.

1. Waste organic matter.
2. Destruction of refuse.
3. Disposal of sewage.
4. Sewerage systems.
5. Sub-soil drainage.
6. Mill-dams, mill-ponds, and drowned lands.

6. Outbreaks of Disease.

1. Classes of outbreaks.
2. Vaccination.
3. Isolation hospitals.
4. National quarantine system.
5. Inter-state notification.
6. Laws relating to outbreaks.

7. Food and Drink Supplies.

1. Water supplies.
2. Milk supplies.
3. Meat supplies.
4. Flour and other foods.
5. Laws to regulate the same

8. School Hygiene.

1. Inspection of schools.
2. Construction, ventilation and drainage of schools.
3. Vaccination of school children.
4. Laws regarding infectious diseases in schools.

9. Public Institutions.

1. Outbreaks of disease therein.
2. Sanitary condition of public institutions.
3. Disposal of sewage in same.

In addition to the preceding subjects dealt with in the reports proper of the Board, the following list presents a *resumé* of the reports, addresses, etc., presented to the Board by its committees, or which have been delivered by its members at sanitary conferences or public meetings to discuss health matters.

1882.

Report of Committee to England *re* Sanitary Matters.
Report of the Committee to Boston, New York and Albany.
Report of Delegate to the International Congress of Hygiene to Geneva.
Report of Committee sent to visit Michigan, Detroit and Toledo Boards of Health.
Circular to Clerks of Municipalities asking for information regarding disease, etc.
Circular to Physicians.
Pamphlet on "How to Check Contagious and Infectious Diseases."
Treatment of the drowned.
Report of the Commission to investigate typhoid at Sarnia.
Report of Commission to investigate malaria at Coboconk and Madoc.
Report of Commission to investigate typhoid at Chatham.
Report of Commission to investigate typhoid at Lambton Mills.
Report regarding water supply and disposal of sewage of Toronto.
Report of Committee on emigrant inspection.
Report of Committee on disease reports.
Report of the Committee on legislation.

Addresses, etc.

By Chairman.
On Food Adulteration.
Contamination of Drinking Water.
Contagion.
Public Schools and Public Health.
Prevention and Restriction of Contagious Diseases.
Sewerage as a Sanitary Measure.
Heating and Ventilating of Buildings.
Typhoid and other Zymotics and how to Prevent them.
School Sanitation: Its Necessity and Methods.

1883

Summer Resorts for Children.
American Public Health Association at Detroit
Report of Committee of Ontario Medical Association *re* Public Health, Vital Statistics, etc.

1883.

Directions *re* Asiatic Cholera.
On Disposal of Sewage.
Report of Leslieville knackery and fat-rendering establishment.
Report on condition of Ashbridge's Bay.
Report on the smoke nuisance in Toronto.
Report *re* saw dust at Parry Sound.
Re a text-book on Hygiene for Schools.
Medical inspection of schools.
Sanitary arrangements and health conditions of Hamilton schools
Report of the London Sanitary Convention.
Paper read before the Hamilton Literary Association.

1884.

The Public Health Act.

1885.

Report on poisons and chemicals.
Report of the London sewage investigation Committee
Report of the Committee on epidemics.
Report on typhoid fever at Kingston Asylum.
Report on the establishment of the Vaccine Farm.
Report *re* Infanticide.
Report *re* the sewerage system of Woodstock.
Report on Maritime and Land sanitation.
Report *re* the inspection of cemeteries.
Report on the St. Mary's cemetery.

1886.

Health notes of a trip in Britain.
Report *re* abattoirs and slaughter houses.
Report *re* nuisances arising from cheese factories, etc.
Report of Committee on foods and drinks and ice supplies.
Report of Committee on sewerage *re* Stratford and other towns.
Report *re* starch factory nuisance at Brantford.

1887.

Report *re* the quarantine station at Grosse Isle.
Report *re* anthrax at Guelph.
Report *re* outbreak of diphtheria in Nipissing District.
Report *re* Ottawa fever outbreak.
Report *re* sewer nuisance at Hamilton.
Report *re* water supply for Belleville.
Report *re* Berlin and Brantford water-works.
Report *re* foods and adulterations, and public milk supplies.
Report *re* ventilation.
Report *re* poisons.

1887.

Report *re* grounds for cemetery at Bradford.
Report *re* International Conference of State Boards of Health.
Report *re* meeting of the American Public Health Association.

1888.

Report *re* school hygiene.
Report *re* quarantine.

1889.

Report *re* small-pox in Elgin County.
Report *re* disease amongst horses at Sanford.
Report *re* disposal of sewage in England.
Report *re* sewage and water supply on farm at London Asylum.
Report *re* porous carbon system (sewerage) at Agricultural College.
Report *re* poisons.
Report *re* a fat-rendering and hog-feeding establishment in East Zorra.
Report *re* Union schools at Simcoe, County of Norfolk.

1890.

Report *re* sanitary progress in Britain and on the continent.
Report *re* physical culture in Normal, Model and Public schools.
Report *re* sewerage system for Brantford.
Report *re* Conder system of sewerage at Belleville Institute.
Report *re* flooding of land along South River.
Report *re* public water supply of Orillia.
Report *re* Beaverton mill-dam nuisance.
Report *re* diphtheria at Kingston Asylum.

An examination of the several chapters of the annual reports of the last four years seems to mark the fact that the scientific work of the Board has been notably assisted by the laboratory. Thus in that of 1892 the results of the first work done in Canada in the diagnosis of tuberculosis in cattle are set forth. In that of 1893, the position of the bacteriological examination of waters is outlined; while some notable results of experiments in steam disinfection, are set forth.

Again in that of 1894, the development of bacteriological investigations is seen in an article dealing with "Toxines and Anti-toxines." This again is followed in 1895 by a chapter on "The Action of Light on Bacteria." In that of 1896, several chapters refer principally to the most recent results of the work in public health laboratories, and indeed, illustrate in the chapter on "Louis Pasteur" the *gradus ad Parnassum* in this difficulty study of "the infinitely small." And one study which I find running especially through the reports of the last five years is that dealing with that subject of absorbing interest and importance, *Tuberculosis*.

The following are some of the chapters dealing with the subject:

The Report of 1890, containing the conclusions of the Committee on Epidemics, re tuberculosis and the tuberculin vaccination of Koch.

The Report of 1891—Practical methods of securing safe public milk supplies

The Report of 1892—How consumption is spread and some measures for its prevention.

The Report of 1893—The air space and ventilation of buildings in relation to the public health.

The report of 1894—Influence of climates on prevention and cure of consumption.

The Report of 1895—A review of the elements entering into some Canadian climates in relation to Tuberculosis, and,

Contagious diseases in cattle and cattle inspection.

Perhaps the belief may be too sanguine a one, but I, at any rate, am persuaded that the constant *placing* of the problem, of how to minimize the ravages of tuberculosis, will shortly result in organized measures for dealing promptly and effectively with it in every county of the province.

There is another branch of our public health work which is deserving of attention from its notable development during the past fifteen years, viz.: the installation of public water supplies and of sewerage systems in our incorporated municipalities. The following list includes the particulars regarding the several works in the province established up to the end of 1897. Some ninety public water supplies, very largely under municipal control, exist in Ontario, all but twelve of them having been established since 1882. The table gives the returns made to this Board in reply to a circular sent out in the various municipalities. From column 4 of the table the remarkable information is gathered that $11,862,162.00 has been expended in Ontario on public waterworks, of which $7,821,301.00 is a wholly new expenditure since 1882; while of the balance $4,040,861.00 for works already established in that year, a very large part is for extensions since that year.

Table *re* Waterworks

Place.	The year when waterworks system was established.	The present estimated population.	The present number of water takers.	The approximate cost of the waterworks.
				$
Toronto	*1849	200,000	40,000	4,000,000
Hamilton	*1857	50,000	13,544	2,000,000
Kingston	*1850	19,000	3,100	320,000
London	*1878	39,000	7,500	732,351
Ottawa	*1874	50,000	10,700	1,636,180
Brantford	1889	16,237	2,291	243,218
Belleville	1888	10,500	750	200,000
Chatham	1890	8,788	830	177,688
Windsor	*1873	11,915	2,800	304,000
Guelph	*1880	10,741	1,125	144,950
St. Thomas	1891	11,000	2,000	150,000
St. Catharines	*1878	10,144	2,200	305,000
Stratford	1883	10,365	202	104,312
Gananoque	1890	3,600	none	23,000
Georgetown	1891	1,500	184	40,000
Newmarket	1887	2,300	165	27,000
Toronto Junc	1889	4,773	957	150,000
Trenton	1895	4,160	120	15,000
Eglington (North Toronto)	1891	1,579	123	40,000
Niagara Falls, S	1892	1,404	180	9,000
Galt	1891	7,480	1,134	170,000
Niagara Falls	1884	4,500	801	96,050
Dunville	1891	1,974	70	13,000
Mitchell	*1873	2,200	none	15,000
Collingwood	1890	5,500	900	75,000
Markham	1890	1,100		12,000
Stouffville	1897	1,250	just completed	25,000
Lindsay	1892	7,000	375	75,000
Cornwall	1887	8,326	600	98,000
Leamington	1891	2,700	245	18,000
Alexandria	1895	1,600	43	29,000
Petrolea	1891	4,900	720	180,000
Watford	1893	1,300	12	
Niagara-on-the-Lake	1891	2,000	100	34,000
Essex	1891	2,100	270	31,500
Alvinston	1895	1,100		1,000
Seaforth	1879	2,400	only used for fire protection.	11,000
Pt. Edward	1880	1,328	10	1,328
Alliston	1893	1,900	50	19,000
Teeswater	1889	1,100	fire purposes only	11,000
Goderich	1889	4,500	400	84,000
Tilbury Centre	1898	1,100	120	1,585
Dundas	1888	3,040	150	40,000
Welland	1888	2,000	375	55,000
Smith's Falls	1895	4,200	60	can't say
Pt. Arthur		3,000	public hydrant	
Renfrew	1897	3,100	10	60,000
Paris	1885	3,002	400	55,000
Morrisburg	1887	1,900	225	30,000

and Sewerage Systems.

The source of the water supply.	The year in which sewerage was begun.	The miles or feet of sewers laid down to date.	Remarks.
Lake Ontario	1840	229 miles	
Lake Ontario	1852	50 "	
Lake Ontario	1886	17 "	
Springs	1896 new	12 "	
Ottawa river	1875	43 "	
Springs	1889	14 "	
Bay Quinte	1864	9,000 feet	
River Thames	1856	20 miles	
River Detroit	1876	20¼ "	
Springs and river	none		
Kettle Creek	1893	10 "	
Lake Erie	1870	5 "	
Three spring lakes, spring rivulets, river Avon.	.....	.....	Stratford Waterwork Supply Co.
Gananoque river	no general system		
Gravity from springs	"		
Artesian wells	none	none	
Lake Ontario	1892	36,086 feet	
Springs	none	none	
Springs in gravel	none	none	
Niagara river	none	none	
Springs and wells	1896	one-third mile	
Niagara river	1896	9½ miles	
Grand river	none	none	
Thames river	none	none	
Georgian Bay	none	none	
Springs	.....	.....	
Springs, gravitation	none	none	
Scugog lake	not begun	one-third mile	
St. Lawrence river	1887	4 miles	
Artesian wells	none		
River De l'isle	not yet		
Lake Huron	1887	5 miles	
.....	1893	½ mile	
Niagara river	.....	.....	
Artesian wells	none	.....	Tile drains.
Sydenham river	none	drains, 2 miles	
Small creek	none	none	
River St. Clair	none	none	
Boyne river	1883	50 feet	
River	none	none	
Lake Huron	1886	6½ miles	
Creek	1888	1 mile	Only for drainage.
Gravitation springs	none	none	
Lake Erie	1888	2 miles	
Rideau river	.....	3,800 feet	
Spring Creek	1887	5,300 "	
Bonnechere river	1897	5 miles	
Springs	no system		
St. Lawrence river	no system		

Table of Waterworks and

Place.	The year when waterworks system was established.	The present estimated population.	The present number of water takers.	The approximate cost of the water-works.
				$
Brockville	1884	8,850	1,250	176,624
Kincardine	1890	2,332	180	40,000
Sudbury	1896	1,500	110	45,000
Thessalon	1896	800	100	8,000
Walkerton	1891	3,100	292	32,000
Pembroke	1894	5,000	400	61,550
Deseronto	1896	3,095	110	35,000
Napanee	1890	3,000	125	60,000
Wiarton	1889	2,200	340	28,200
Ingersoll	1890	5,000	350	100,000
Kingsville	1894	1,400	.....	20,000
Listowell	1888	2,600	.....	.....
North Bay	1892	2,500	430	55,000
Barrie	1890	7,500	460	60,000
Penetanguishene	1890	2,500	205	30,000
Cobourg	1889	4,036	can't say	can't say
Waterloo	1889	3,200	120	25,000
Meaford	1896	2,000	500	2,300
Berlin	1888	9,295	700	140,000
Lucknow	1885	1,500	none	10,500
Campbellford	1889	2,537	97	24,000
Huntsville	1897	1,800	50	22,000
Fort William	1897	3,500	just introduced	35,000
East Toronto	1888	1,300	232	35,000
Merritton	1889	1,800	300	70,000
Beeton	1893	780	80	14,500
Amherstburg	1891	2,160	550	40,000
Peterboro'	1882	10,935	.....	.....
Parry Sound	1892	2,500	283	34,300
Shelburne	1886	1,400	38	12,000
Walkerville	*1877	1,110	360	250,000
Sault Ste Marie	1895	3,500	137	100,000
Woodstock	1886	9,000	1,110	160,000
Owen Sound	*1880	8,000	1,200	110,000
Sarnia	*1876	6,439	1,500	95,500
Aylmer	1895	2,500	no domestic service	17,000
Perth	1897	4,000	just introduced	70,000
Picton	1889	3,504	175	34,000
Milton	1887	1,300	100	23,000
Port Hope	1894	5,000	150	57,500
Brampton	1882	3,300	270	82,000

NOTE.—* 12 systems
78 systems

Sewerage Systems.—*Concluded.*

The source of the water supply.	The year in which sewerage was begun.	The miles or feet of sewerage laid down to date.	Remarks
St. Lawrence river	1888		
Lake Huron	none	none	
Ramsay lake	1895	12,600 feet	
Lake Huron	1893	½ mile	
Springs	1895	4,185 feet	
Ottawa river			No regular system.
Bay Quinte	1890	5,080 feet	
Napanee river	1889	1 mile	
Colpoy's Bay			No regular system.
Springs	none		
Lake Erie	none		
Spring Creek			For fire purposes only.
Lake Nipissing	none	none	
Artesian wells	1891	17,646 feet	
Springs	1835	one-third mile	
Lake Ontario	1893	1½ mile	
Artesian wells and springs	1895	17,000 feet	
Well	none		
Springs and artesian wells	1890	9 miles	
Spring Creek		600 feet	For fire only.
River Trent	none		
Lake Vernon	none		
Kaministiquia river	some in 1890	2,400 tile. 15,800 wooden sewers.	
Springs	none		
Lake Erie	none		
Spring creeks	none	none	
Detroit river		5,000 feet	
Otonabee river	1892	4¾ miles	Waterworks owned by Co.
Georgian Bay		none	
Gravitation, supplied by windmill pump.	none	none, other than private drains.	
Detroit river	1890	4½ miles	
St. Mary river	1895	5,400 feet	Difficult to estimate cost, large outlay for Power canal.
Springs	1880	7½ miles	
Springs	1886	8 miles	
River St. Clair	1881	30,000 feet	Including mains.
Catfish creek, fed by wells	none	none	
River Tay	not yet begun		Including water power to run electric light.
Bay Quinte			
Springs		10,000 feet	
Lake Ontario	1897	800 feet	Sewer pipes being laid.
Small lake			

established prior to 1882.
established since 1882.

The tabulated returns given above indicate more clearly perhaps than anything else, the extent of municipal development during the past fifteen years. If we were to collate the municipal expenditures on public buildings, streets, sidewalks and parks during the same period, we would probably find an equally accurate index of the advances of our people in municipal work: but it has been noted that water-works and sewers, owing perhaps to their demanding a larger immediate expenditure, belong to the later stages of municipal evolution. We see from the above tables that all the thirteen cities have established a general system of water-works, and almost all have a general sewerage system. Of the 98 towns in the Province, 57 have water-works: and of the villages, 20 have works of a smaller character.

That these public works have played a notable part in promoting the general health is very well illustrated by the notable fall in the mortality from typhoid fever during the third quinquennium as seen in the table on page 11.

Another illustration of municipal evolution may be seen in the work of providing hospitals. Whatever may be said of such institutions as tending to pauperize a certain class of the community, or to influence the practice of medicine, looked at as merely life-saving institutions, such hospital development undoubtedly has played, and is playing an important part in public health work.

The following table illustrates the development during the last twenty years of the hospitals of the Province. Thus in the year 1878 there were ten hospitals with 4,372 patients treated in the hospitals, receiving aid from the Ontario Government, while in 1897 there were 19,617 patients in hospitals receiving Government aid, and at the beginning of 1898 there were forty-seven hospitals on the list of those receiving a provincial grant:

Hospitals. 1898.	Location.	Hospitals.	Location.
General Hospital	Toronto.	General Hospital	Stratford.
Grace (Homœpathic) Hospital	"	Amasa Wood Hospital	St. Thomas.
Hospital for Sick Children	"	General and Marine Hospital	Owen Sound.
St. Michael's Hospital	"	Sick Children's Hospital	Ottawa.
City Hospital	Hamilton.	General Hospital	Chatham.
St. Joseph's Hospital	"	General Hospital	Sudbury.
General Hospital	Kingston.	General Hospital	Huntsville.
Hotel Dieu Hospital	"	Woodstock Hospital	Woodstock.
General Protestant Hospital	Ottawa.	Berlin and Waterloo Hospital	Berlin.
Roman Catholic Hospital	"	Maternity Hospital	Ottawa.
House of Mercy Lying-in-Hospital	"	Sarnia Hospital	Sarnia.
General Hospital	London.	Toronto West (General)	Toronto.
St. Joseph's Hospital	"	St. Joseph's Hospital	Sudbury.
General and Marine Hospital	St. Catharines.	General Hospital	Rat Portage.
Galt Hospital	Galt.	General Hospital	Barrie.
General Hospital	Guelph.	General Hospital	Cornwall.
St. Joseph's Hospital	"	Hotel Dieu Hospital	"
General Hospital	Pembroke.	St. Luke's (General)	Ottawa.
General Hospital	Mattawa.	1878.	
J. H. Stratford's Hospital	Brantford.	General Hospital	Toronto.
St. Joseph's Hospital	Port Arthur.	City Hospital	Hamilton.
Belleville Hospital	Belleville.	General Hospital	Kingston.
St. Vincent De Paul Hospital	Brockville.	Hotel Dieu Hospital	"
General Hospital	"	General Protestant Hospital	Ottawa.
General and Marine Hospital	Collingwood	Roman Catholic Hospital	"
Nichols' Hospital	Peterborough.	General Hospital	London.
St. Joseph's Hospital	"	General and Marine Hospital	St. Catharines.
Hotel Dieu Hospital	Windsor.	General Hospital	Guelph.
St. Joseph's Hospital	Chatham.	St. Joseph's Hospital.	"

While the Charity Aid Act provides that general hospitals must not receive smallpox cases, and while they do not receive other contagious diseases into the general wards, yet a number of them have either specially constructed wards for the isolation of such cases, or have separate buildings in which are received such diseases as diphtheria, and to some extent scarlatina. Several cities have separate contagious disease hospitals under the immediate control of the Local Board of Health. Of these there are:

Isolation Hospital, Toronto, forty beds. Control of Local Board of Health.
Hospital for Sick Children, Toronto, isolation wing.
Infants' Home, Toronto, isolation wing.
City Hospital, Hamilton, two separate isolation buildings.
St. Joseph's, Hamilton, one isolated ward.
General Hospital, Kingston, isolated ward.
Hotel Dieu, Kingston, isolated ward and new wing under construction.
General Hospital, London, isolation wing under construction.
St. Joseph's, London, isolated annex.
General Hospital, St. Catharines, isolated ward.
General Hospital, Guelph, isolation building and annex.
St. Joseph's, Guelph, isolated ward.
General Hospital, Mattawa, separate isolation building.
Belleville Hospital, Belleville, isolated annex.
General Hospital, Brockville, isolated ward.
St. Vincent de Paul, Brockville, isolated ward.
Nicholls Hospital, Peterborough, isolation annex.
St. Joseph's, Peterborough, isolated ward.
Hotel Dieu, Windsor, isolated ward.
General Hospital, Chatham, separate isolation building.
St. Joseph's, Chatham, isolated ward.
St. Thomas, an isolated Hospital for smallpox only.
General Hospital, Owen Sound.
Ottawa Hospitals, three separate isolation hospital buildings
General Hospital, Huntsville, isolation building.

Owing to the terms of the Charities Aid Act, and to some degree, perhaps, to a provision of the Public Health Act, there is not so evident an extension of the municipal idea of an hospital or building for contagious diseases as could be wished. In a number of instances, however, buildings exist, some of them permanent and others of a temporary character, for the treatment of contagious diseases. The desirability of local boards of health having small isolated buildings to which cases from small houses, or indeed anywhere, can be promptly removed, has been again and again pointed out in the reports of past years, and it is with pleasure your secretary is able to state that the practical utility and economy of the measure is yearly being more clearly appreciated, even by the boards of small municipalities. Local boards now clearly realize that once a patient and its nurse are isolated thus, the anxiety regarding second cases in a house and the dissemination of the disease beyond this house are practically removed. That the local boards are taking advantage of their powers to establish such hospitals, at least as temporary ones, is illustrated by the fact that during the past year it was only necessary for your secretary, in visiting several small towns and villages where contagious disease had broken out, to point out

how readily a rented house in the suburbs could be made available for the purpose, to have action taken at once to secure control of such and to send there the child and mother in cases where isolation was difficult in the home. Such have been of signal use in stopping outbreaks without any notable spread. Local boards are still requiring to understand more fully both their powers and duties in dealing with such outbreaks, and it is seldom indeed, that the town council will raise any serious objection to the expenditures when they see the practical utility of the method. It further becomes of the greatest value in supplying a good reason for local boards insisting on the prompt notification by physicians of cases under their charge. Systematic efforts on the part of local boards with regard to the notification by physicians, householders and school authorities of cases has everywhere resulted in a very general compliance with the law. There is now practically nowhere any serious idea of questioning the reasonableness and the utility of what is known as compulsory notification in those municipalities in Ontario where public health work has been seriously undertaken.

That the legislature has realized and kept pace with the advances in public opinion with regard to the public health is evident from the enactments which have been passed from time to time since 1884.

Thus in 1885, additional powers were given to the:

1. *Provincial Board to compel local action in outbreaks of diseases.*
2. *An Order-in-Council to deal with smallpox.*

In 1886—

4. *Powers of compulsory vaccination extended to Local Boards of Health.*
5. *Powers to expropriate land for isolation hospitals.*

In 1887—

6. *Notification by teachers of contagious disease in schools.*
7. *Regulation of Ice Supplies.*
8. *Inspection of Slaughter Houses and Dairies.*
9. *Control of vaccine by Provincial Board of Health.*

In 1889—

10. *Sanitary control of Unorganized Districts by Stipendiary Magistrates having been made health officers of the Provincial Board.*

In 1890—

11. *Control by Inspection of animals, meat and milk affected with tuberculosis. Increased powers of Local Inspector and by the Provincial Board.*
12. *Scientific examinations of diseased tissues in laboratory of Provincial Board established in the same year.*
13. *An Order-in-Council making regulations for control of outbreaks of diphtheria.*

In 1891—

13. *Powers given to County Councils to appoint County Health Officers.*
14. *Powers given to the Lieutenant-Governor-in Council to appoint Health Officers in Unorganized Districts.*
15. *Making Secretary of Provincial Board of Health Deputy-Registrar-General, with one office and staff.*

In 1893—

15. The Local Boards of Health in Townships, on resolution, may require physicians attending any contagious disease to affix the placard within twenty four hours.

16. An Order-in-Council dealing with inspection and control of Ice Supplies.

17. An Order-in-Council making regulations for control of outbreaks of Asiatic Cholera.

In 1895—

18. Powers to appoint members of Local Boards of Health for three years.

19. Extension of powers of Provincial Board of Health in the matter of control of Public Waterworks and Systems of Sewerage.

20. The prohibition of feeding offal to hogs except after being boiled and only when fresh.

21. Extension of power to inspect nuisances beyond limits of any municipality.

In 1896—

22. Extension of powers of sanitary inspection to Chief Ranger of Algonquin Park.

23. Act to inspect all meat by establishment of municipal abattoirs and to inspect and test milch cows by the tuberculin test.

24 Act for regulation and inspection of Bake Shops.

25. Compulsory provision requiring Division Registrars of every municipality to send to Secretary of Provincial Board of Health a return of the number of deaths from each of the several contagious diseases for the preceding month

The reference to the legislation of the past fifteen years amply illustrates the wide field which the Legislature has intended the work of the provincial and local boards of health to cover; and as will be seen by reference to the powers to appoint county health officers, it has clearly indicated a direction in which the larger and more effective work of municipal health authorities can be developed. The references herein already made to the more accurate and scientific work of the Provincial Board, owing to the institution of its laboratory, further point out the means by which the work of county health officers can and will become of incalculable value to those municipalities which take advantage of the powers given to county councils.

It would appear most essential that the Provincial Board take steps to bring the benefits of such a measure before the several county councils. It would mean the appointment of young physicians trained in biological science as well as in medicine, and who would devote all their time and energies to scientific work, both in their laboratory and in visiting the township and other municipalities within their jurisdiction, investigating the causes of disease, and by accurate local knowledge would devise measures both for suppressing outbreaks and for preventing them. This work would extend to the assistance of patrons of cheese-factories, to veterinarians in dealing with animal diseases, as well as to physicians who may require accurate scientific examination in doubtful cases of diseases.

Well-waters and town waters would be investigated, suspected milk and meats would be examined, and the work of the laboratory might well be extended to the investigations of coroners associated with deaths where violence has been suspected. But your Board has rather to find means for the accomplishment of such desirable results than to be convinced of what has more than once been pointed out by your secretary as the ideal position

towards which public health in Ontario should endeavor to attain. In keeping with such development, it is only natural to expect that the facilities provided for enlarging this Board's laboratory work should be extended. To-day, as will be illustrated by the study of a single outbreak of diphtheria, found in chapter III. of this report, the whole time, practically, of the Board's laboratory staff is devoted to routine work, even though it be of the greatest practical value. Much more, indeed, is needed with laboratories developing on every side, in foreign countries and in the United States, and even in neighboring provinces. The Provincial Board of Health laboratory should be equipped to the extent that it will form the nucleus of a hygienic institute. It should have facilities for the preparation of vaccine of the highest possible aseptic quality; it should, like Massachusetts, be manufacturing antitoxines of known standard qualities, and tuberculin to an extent equal to every demand which may be made upon it, and it should be in a position to supply the Pasteur treatment to every person in the Province, or in Canada, bitten by a rabid dog, and should further be a centre for purely experimental work in making studies along the new lines which are constantly opening up in the field of biological science as applied to the public health.

CHAPTER II.

LABORATORIES OF HYGIENIC RESEARCH.

The need and utility of such laboratories have been indicated in the preceding chapter, and what is being done elsewhere in this field of public health work must prove of interest. I shall refer first and particularly to the State of Massachusetts, for two reasons: first, because it has a population of but little more than the Province of Ontario, and second, because it is in the evolution of state sociology, the only State on the continent fairly comparable with the Province of Ontario.

There is, however, an essential difference in other respects between Massachusetts and Ontario, which must be taken into account when comparisons are made regarding certain features of State government. Thus, while Massachusetts has a population of 2,500,000, and Ontario 2,233,000, the area of Massachusetts is but 8,040 square miles, while Ontario has an area of 228,000 square miles. Again, while Massachusetts was an old State in 1788, having been a colony since 1620, with 100,000 in population in 1700, Ontario was in 1788 first divided into five judicial districts under the justices of the Quarter Sessions and English law extended to it. But further, while the population of Massachusetts has 56 cities and towns, each with a population of over 5,000, with nine-tenths of the population living in these towns and cities, and having an area of but 3,188 square miles and 588 persons to a square mile, amounting to a total of 1,876,185, Ontario had in 1893, by the municipal assessment, the population divided as follows:—

In 13 cities (10,000 and over)	385,019
In 233 (towns and villages)	422,041
In 450 townships (rural)	1,103,433

The bureau of vital statistics began in 1855 in Massachusetts, while the registration of marriages began in Ontario in 1849, and births and deaths in addition only in 1869. The rural populations may be compared by a comparison of the value of the cattle population in each. Thus in 1893 the total value of live stock in Massachusetts was $14,200,178, while in Ontario the value of the stock was $116,070,902. Or again, the total assessed acreage in Massachusetts is 5,145,600, while in Ontario it is 23,172,408 acres in the rural area alone, with an extent of unassessed territory not yet under municipal organization of 122,000,000 acres.

From this *resumé* it seems evident that the work which a state or provincial Board has to perform varies notably in the two areas. The problem in Ontario is doubtless a simple one, so far as the sanitation of urban populations is concerned. On the other hand it may well be that with the much larger urban population in Massachusetts, the local health organizations are enabled to have a better paid class of health officers to devote all or most of their time to public health work. That such, however, demand constantly direction and assistance from state officers is seen in the tabulated statement of work done by the state board of health, as published in the Report for 1896, as compared with similar work in Ontario.

I have placed the several works in the two parallel columns :—

Amount of Laboratory work.	Massachusetts.	Ontario.
No of samples of drugs examined	8,338	Work done by Federal (Dominion) Department of Internal Revenue. Act passed in 1895, requiring Provincial Board to examine patent medicines. No laboratory for the work, as yet provided.
Samples of milk examined.	4,484	None chemically. 4 bacteriologically.
Number of prosecutions for adulterations	75	Work done by Federal author ties.
Number of packages of Anti-toxine sent out. (Prepared by State laboratory	3,245	120 bottles purchased from foreign sources only and distributed.
Number of bacterial cultures for diagnosis of diphtheria	1,469	642.
Number of examinations for tuberculosis	124	119.
Number of examinations of malarial blood for plasmodia	57	Typhoid blood examinations, 78.
Number of cases of infectious diseases recorded	21,315	Reported tc local boards.
Number of post card returns of mortality received and recorded	2,340	8,000 (in twelve months).
Number of Annual Reports received	86	700.
Force employed at central office	1 Secretary ; 2 Clerks ; 1 Messenger.	1 Secretary ; 2 Clerks ; 1 Messenger.
Force employed for food and drugs analysis	2	None.
Chemists and assistants	1.	"
Inspectors	3.	"
Force employed at laboratory	Pathologists, 1	Bacteriologist. 1.
	Assistants, 3	None.
Applications for advice from cities and towns relating to water supply	39.	11.
Sewerage and drainage	19.	15.
Pollution of streams	7.	3.
Samples of water examined	2,200	96.
Sewage effluents examined	199.	
Samples of water and sewage from board's experimental station	2,929	None.
Samples of sand examined mechanically for experimental station	326	None.
Sand samples from other filtering works in State	6,500.	None.
Force employed at central experimental station	1 Chief Engineer	None (no station).
	3 Assistant Engineers	None "
	2 Stenographers and Clerks	None.
At Massachusetts Institute of Technology	5 Chemists	None (no station).
	1 Chief Biologist	None.
	1 Asst "	None.
At Lawrence filtering experimental station	3 Chemists	None (no station).
	2 Bacteriologists	None.
	4 Assistants and laborers	None.
Total expenditures for general work of Board	$15,800.00.	$9,000 00 $2,000.00.
For carrying out laboratory experimental work, analysis	$30,000.00.	
Manufacture of Anti-toxines, tuberculin, etc		None.
Act *re* food and drug inspection	$11,500.00	None.

With regard to the several works carried on, the following recommendations are made by the board of health of Massachusetts to the Legislature in the beginning of 1897.

"The Board recommends the continuance of its investigations now being carried out as authorized by the Act of 1888. For the purpose of and to make the necessary investigations in order to advise cities, towns, corporations and individuals in regard to the best methods for assuring the purity of intended or existing water supplies and the best method of disposing of sewage, the Board estimates that the sum of $30,000 will be required."

That the practical work in two such areas must vary very notably in its needs is apparent. While the work in Massachusetts, as illustrated from its large urban areas of population, demands much technical knowledge of a medical, biological, and engineering character, and while much of such, could with the greatest advantage be employed in Ontario, it is apparent that the large rural areas of Ontario demand especially a definite number of medical officers of health trained in biological and practical sanitary work, under whose supervision, contagious diseases in both men and animals can be dealt with promptly, the abatement of nuisances associated with cheese factories and creameries, abated in a routine manner by provisions for proper disposal of the refuse from such places and the piggeries associated with such, and the supervision of the construction, the ventilation and water supplies of the public schools, and the investigation of local insanitary conditions on farm premises and in the smaller villages, notably as regards the water supplies, so often fertile sources of typhoid and similar filth diseases.

While these differences in needs are apparent, we cannot, however, be blind to certain real differences as regards scientific investigations of sanitary problems, in which certainly Ontario does not show to advantage. There has undoubtedly been a tendency in Ontario, similar to that in the newer and less developed Western states, to devote the energies of the teaching staff in our several universities and colleges to the routine teaching of knowledge, doubtless valuable enough in itself, but since it is second-hand, failing to create a desire or give opportunities for investigation in the field of research. More than this, however, though we have laboratories in some departments in which much might be done, were time and workers supplied, yet in many directions, these are inadequate for the ends to be attained. While to the ordinary observer, laboratories of research in sanitary science may not seem to have a very direct economic value, nevertheless, the needs observed both in England and elsewhere, in the matter of laboratories of scientific research, are not limited to such alone, since research work in Germany and France has long since been shown to be productive of the most remarkable economic results. Moreover, what has been done in the seats of learning, whether in England or the United States, has been almost wholly due to private benefactions, and not to state aid. As regards laboratories of sanitary research in the latter country, apart from the experiment stations and laboratories of Massachusetts, and the working laboratories attached to the city health departments of New York and Brooklyn, the Laboratory of Hygiene of the University of Pennsylvania, established by private benefactions, is almost the only place where systematic sanitary investigations are carried on in that country and in the latter, the energies of the staff are devoted rather to teaching than to practical investigations. The following statement of the scope of the work is given by, H. C. Abbott, M.D., Director of the Laboratory. "It comprises the teaching of undergraduate medical students, and of graduate medical students, and the direction of advanced work by individuals who have the training necessary to the proper performance of such work. It is interesting to note that the workers in our laboratory have been almost exclusively in the line of

bacteriology. We have had practically no demand whatever, for the teaching of hygiene. The reason for this, I believe, is that there is no market for men trained in practical hygiene—no opportunity for them to make their living through the possession of such expert knowledge. I am just now engaged in endeavoring to broaden the scope of our work by asking the co-operation of the state and local boards of health, with the hope of ultimately organizing in different parts of the State, small laboratories which would aid the state and local boards in their work." The direction which it is apparent, laboratory research even where now begun, tends, is very neatly set forth in the remarks of Dr. Abbott, and the reasons for it accurately indicated. The question is, not whether sanitary research, as into ventilation and heating, drainage and sewerage problems, the mechanical and biological qualities of soils, of ground air, of the climate of altitudes, of malarial areas, the air contents and qualities of factories in different industries, of cellar air and house and hospital air, admits of almost illimitable development, but whether the people are advanced sufficiently to realize the vital influences of such conditions upon every citizen.

To day the engineering schools do a little of hygiene, in teaching the mechanics of sewerage and construction of water works, but little or nothing of its biological factors; the architects are taught draughting and many other important problems connected with their art, but very little indeed of the physical qualities and conditions under which the ventilation of buildings is to be carried out. In all these fields then, it is apparent that the present methods have as their object and aim to give to a physician a modicum of specific bacteriological knowledge, that he may appropriately be labelled *a medical officer of health*: to the mechanical engineer and surveyor enough knowledge to test sewer pipes, and have them truly laid, that he may be called *a sanitary engineer;* and to the architect, that he may see that the apparatus of some mechanical inventor, be placed in the house walls in such a position that it will at any rate, draw some fresh air into the rooms. Surely however, there is a need and a practical possibility of having these several growing and most necessary branches of scientific work, so brought together, that the training of men for dealing broadly with the manifold sanitary problems of a municipal area, rural or urban, may be made possible; and that they be partakers in and witnesses of such scientific investigations into sanitary problems that they will not be claiming positions for which they have not been trained, either by virtue of their bacteriological expertness alone or their ability to lay water pipes or sewers.

This, however, can only be done by establishing research schools, and at the same time establishing state and municipal official positions, in which thoroughly trained officers may devote as members of a working profession, all their energies to the improvement of the local health conditions of life, and become an advanced guard amongst the workers in all fields of social progress and reform.

As stated by Mr. Addison Brown of New York, in dealing with "Laboratories of Research." "The vital relation between the advancement of knowledge and the welfare of man furnishes an all sufficient reason for the continuous and never-ending prosecution of original research. As there is no limit to the advance of knowledge, so there can be none to the benefactions it may confer on mankind."

That the value of such work is realized most fully in Germany by the government, it may be stated that there are there, 21 universities maintained by government, which in the field of natural science or biology alone, maintain five district departments, viz:—those of physiology, botany, anatomy, pathology and zoology, having at the head of each, a professor and two paid assistants, or 200 workers

devoting themselves in Germany, to biological research alone. England has less than a quarter this number, while more than 1,000 workers in the various sciences in the different institutions in Germany, are appointed and paid by the government. The results of this seemingly extravagant endownent of scientific research, has in Germany, and will yet more rapidly, entered the field of economics and commerce, and, greater than all subventions and bonuses together, will go to determine commercial supremacy over nations, who lag in similar work.

Dr. Krause speaks of the Elberfeld tar products manufactory, "The Tarbenfabriken," where sixty trained scientists are employed, there being twenty-six in the chemical department alone, while in the "Badische Anilin and Sodafabrik" works, seventy-eight chemists, (fifty-eight Ph. Ds.) are constantly employed in research work.

Of these classes of goods, some $20,000,000 are annually exported from Germany, or nine-tenths of all manufactured in the world.

As Prof. Henry E. Armstrong, London, England, has recently said, "Chemistry is now a German science, and twenty years will make it still more so. In Germany, the victory has been wholly gained by the universities, no longer as in England, dominated by the influence of the monkish cell."

In such research work, looked at purely in its relations to public health work, we may properly enquire what is being, and what ought to be, done in the Province of Ontario. As regards public health organizations, we may say that the Province of Ontario, has now for fifteen years, had its department of public health, and that in 1890, it began in the appointment of a trained bacteriologist, and the equipment of a small laboratory for the development of such work, as the examination of the waters proposed as sources of public supply, of suspected well waters, and the examination of diseased tissues. The more accurate work of the board has since then been gradually extended. Within more recent years, the work has increased very greatly in the examination of membrane in suspected cases of diphtheria, and of sputum in cases of tuberculosis, and the blood in suspected cases of typhoid fever. When it is realized, however, that there is but one laboratory officer endeavoring to do this routine work for almost all the 800 municipalities in a province of 2,250,000, the fruitlessness of the attempt to deal even with the routine work will be apparent when it is stated that from one municipality alone, of 10,000 population, more than 300 diphtheria samples of membrane were examined within three months. Experimental work has been carried on in connection with several outbreaks of rabies in dogs where several persons had been bitten; while, as will be seen from the tabulated statement already given, the work done is being widened in many ways. It will, therefore, appear quite impossible for the laboratory of the Provincial Board of Health to do more than touch the fringe of the routine practical work in diphtheria, tuberculosis and typhoid, when as estimated from the cases of the several diseases reported for the year 1897 by local boards of health, there were: Of diphtheria some 10,000 cases alone, of typhoid 1,432 cases, and of tuberculosis 5,000 cases or more.

The problem therefore arises, in what direction must we move in order that the local routine work may be properly done, and that the Provincial laboratory may be left free to pursue work in the experimental field, and establish means whereby rabies may be dealt with, whereby vaccine, prepared along the lines of modern aseptic methods, may be kept on hand, and whereby problems now being studied in other countries and states having relation to the vital and economic well-being of our people in matters of health, will find Ontario doing her part in this as in other work.

As has been referred to by Dr. Abbott, in the extract from his letter already quoted regarding Pennsylvania, the time seems opportune for a new departure in the work in Ontario Hitherto it has been a simple Provincial laboratory, almost with a single worker. A number of the larger cities are already seeing the work begun by young and enthusiastic physicians taking up the work of examination of diseased tissues, sputum and diphtheria membrane. What is needed is organization from the Provincial Board of Health centre, outward through the local medical profession, and from thence to the county medical associations, cheese-makers' and other associations, and from these to the county councils. The needs have become apparent to all who are engaged in scientific, professional or business operations in every one of these departments. How shall we have the work focused, and make a central laboratory a source of real help to each and every class is the problem ?

It appears to your secretary that since your Board has, during the past fifteen years, led in the scientific work which has had for its object the application of scientific discoveries in sanitary matters, to the improvement of the public health, that it should devote once again its energies to the prosecution of so desirable and congenial a work as cultivating a general interest locally in the counties of the Province, looking to the establishment of local laboratories for scientific routine work, leaving the central laboratory of the Provincial Board to carry on special investigations as time and assistance may permit. A sanitary institute must be the natural outcome of the public needs, which are evolving a truly public health service and the study of household economics as a recognized branch of political and social economy.

CHAPTER III.

LABORATORY RESULTS IN SERUM DIAGNOSIS OF DIPHTHERIA.*

The reports of local boards and the correspondence of the past year bring in accounts of the increasing application of the bacteriological method to the diagnosis and control of diphtheria It is now recognized as one of the functions of a health department, whether municipal or provincial, to carry out work of this character, and as boards of health acquire an increasing sense of their duties to the public, and authorities provide the means, the work of the bacteriologist in diphtheria increases.

Ontario has not been behind other states in this work, and in so far as her means will permit, has increased during the past year the amount of work done of this character. Local authorities are beginning more and more to appreciate and take advantage of the means afforded by the Provincial Board of Health, and this year has witnessed this distinct advance that rural municipalities have decided to refer all diphtheria or suspected diphtheria cases to the provincial laboratory for diagnosis by swab, and to depend upon reports from the laboratory for the duration of quarantine of suspected cases. On account of this marked increase in work which has occurred this year, it may be well to consider some of the questions in connection with it, upon which the experience of the past year has a bearing. The method of sending specimens to the Laboratory has undergone a change which diminishes considerably the expense to the municipality or the individual. Formerly it was necessary to send specimens by express, as the Post Office regulations forbade the transportation of such specimens through the mails. In response to representations from the provincial and local boards of health, however, the Department at Ottawa has issued instructions to permit the passage of such specimens through the mails as fifth-class matter, provided they are packed according to instructions sent out by the Department. Unfortunately many medical men are exceedingly careless in the packing of such specimens, and the experience of the laboratory has been, that a certain percentage of the tubes containing swabs, are smashed in transit on account of bad packing. This, with a little care, would not occur. The form of the swab has a certain influence upon the result of the examination. In some instances these have been sent as irregular masses of cotton of large size, in which it was impossible to determine by inspection, which surface has been exposed to the exudate. In other cases, the swab has been well made and firm, but of such a large size that it was impossible to get it into the serum tube for inoculation, and portions of the infected surface had to be picked off with sterile forceps and rubbed on the culture medium. Again, the reverse condition has sometimes occurred, in which the swab has been so small that it has seemed doubtful if it could have been properly exposed to the throat surface, and where negative results have been obtained, one was in grave doubt as to their value. The experience of the laboratory has been that the most successful swabs and those which gave the best results were of medium size, firmly made and supported upon wire or a splinter of wood. The wood has seemed the most practical, as it is easier to make a firm swab and there is less danger of the swab slipping off.

* By J. J. Mackenzie, B.A., Bacteriologist to the Provincial Board of Health.

With a swab well made, it is not necessary to use any force in taking the specimen. The diphtheria bacilli are always most numerous upon the exposed surface of the exudate, and all that is necessary in order to obtain them upon the swab is to simply touch the surface. Sufficient force to abrade the surface of the mucous membrane and cause bleeding, as has happened in some instances is not necessary.

A frequent cause of unsatisfactory results has been the culture remaining sterile in spite of careful inoculation. This may be due to some fault in the culture medium or in the swab. That this is not due to the first cause has been repeatedly proven by using the sterile culture tubes for re-inoculation with living diphtheria cultures when a luxuriant growth was obtained. The fault was therefore evidently in the swab, and two causes may exist to account for it. First the throat may have been treated with a strong disinfectant too short a time before the swab was rubbed on the mucous membrane. The result would be in such a case that although bacteria were picked up by the swab, they were either all dead or were subsequently killed by the disinfectant taken up at the same time. A second cause is the use of a fluid disinfectant to sterilize the bottle or tube in which the swab is sent to the laboratory. In this case, although living bacteria were introduced on the swab, the remains of the disinfectant in the bottle have destroyed them before the culture was made and the tube remained sterile. In several instances the use of alcohol to clean the bottle has been found to cause this. The only way in which to disinfect the bottle proper, is by dry heat sterilization, and swabs and tubes may be readily disinfected by placing them in the oven of an ordinary stove and allowing them to remain until just the faintest browning of the cotton takes place. The experience of the laboratory has been to lead us to prefer the swab to a tube inoculated by the medical man himself. The latter method does not really in any way shorten the time necessary for reporting, and it affects the results in that sometimes the tubes must remain at a temperature under 20° C. for twenty-four hours, and the diphtheria bacilli are overgrown by ordinary saprophytes. A large bacillus of the group of B. *subtilis* has proved especially annoying in these cases as it liquefies the surface of the blood serum. If the faults mentioned above were carefully avoided by medical men, the results would certainly be more satisfactory and certain, and more confidence would be felt in reporting results.

The work of examining swabs from suspected diphtheria cases has, as mentioned above, extended considerably during the past year, and this has been due partly to new municipalities taking advantage of the facilities, and partly by more systematic work in certain municipalities. Of the latter may be mentioned Berlin, Dunnville and Picton, from which places results were sent from all suspected cases, and quarantine was not raised in any case until the throat was pronounced clear as a result of a bacteriological examination of swabs sent to the laboratory.

The Berlin results are the most numerous and consequently the most interesting. Up to the end of the year, 382 swabs were examined from Berlin, including new cases and convalescents, and with regard to the first 160 of them, we have complete returns.

The number of suspected cases of diphtheria examined, was sixty-one; of these thirty-three proved to be diphtheria, twenty-five were not, and three were doubtful. Two cases showed no membrane.

Ninety-six swabs from convalescent cases were examined, and the results were as follows:—

Declared free from infection on first examination	.....	37
" still infected " "	.....	27
" free from infection on second "	.....	14 (2 doubtful)
" still infected " "	.....	8
" free from infection on third "	.....	3
" still infected on third "	.....	4
" free from infection on fourth "	.....	1
" still infected on fourth "	.....	1
" free from infection on fifth "	.....	1

Of those, declared free from infection the day after the disappearance of membrane when the swab was taken, there was as follows:—

3rd day	1	10th day	4
4th "	4	12th "	1
5th "	2	14th "	1
6th "	9	18th "	1
7th "	7	21st "	1
8th "	12	24th "	1
9th "	4	25th "	2

An interesting point in regard to these figures, is the comparatively short time which elapsed between the disappearance of the membrane and the disappearance of the bacillus from the throat. In the majority of cases it had disappeared before the ninth day. This is a shorter time than usually occurs under ordinary treatment, and the explanation seems to be the thorough way in which D. anti-toxin was used in the Berlin epidemic. It is the general experience that with the aid of D. anti-toxin, the bacilli disappear more rapidly from the throat, and when we consider the nature of the treatment, we can easily understand how this may be. The researches of Klein and others have shown that the diphtheria anti-toxin serum contains not only the anti-toxin but also a specific bactericidal substance. The amount of the bactericidal substance varies in the different forms of serum, and depends upon the method of manufacture, being greater where the immunization of the horse is carried out with a mixture of toxins and bacilli. But it is present even when the pure toxin is used. Ehrlich and Behring have shown that anti-toxin introduced into the system is gradually excreted in the secretions, and a certain percentage of it must appear in the saliva. The final disappearance of the diphtheria bacillus from the pharynx of a diphtheria convalescent, even when anti-toxin is not used, must be largely due to unfavorable conditions, most probably the passage of a bactericidal substance from the blood to the saliva, and this will be necessarily increased when anti-toxic serum is used in addition, and would explain the more rapid disappearance of the bacillus in such cases.

CHAPTER IV.

AIR-PURITY AS A MEASURE OF HEALTH.

In choosing the subject of this chapter one would seem almost to owe an apology to those of the public who have done your Board the honor to read its report in past years, for, as has been indicated in the introductory chapter, some phase of this problem has time and again been dealt with in annual reports. If the earlier reports of this Board be consulted there will be found articles largely founded on the statistical studies made by the earlier British sanitarians on population density and the mortality rates having relation thereto. Never have been set forth more conclusive facts than those contained in the classical English of Sir John Simon or the exact technical language of Sir Douglas Galton, in dealing with these problems to which they lent their splendid talents, and upon which have depended the notable sanitary achievements of the last forty years in England, as shown by the steadily falling death-rate from preventible diseases.

Two reasons may be given for again taking up the parable of "Pure Air," one of which is that as apostles of hygiene our personal experience and observation teach us that missionary work is still required so far as the general public is concerned, and another that there has appeared a tendency here and there in the laboratory hygienist to measure truth by the millimetre scale of his miscroscope, forgetful of the fact that if we would see other worlds we require still to use a telescope of the amplest dimensions.

But as working health officers we yet further feel that the solution of the great unsolved problem before us—the limitation of the ravages of tuberculosis—demands first that by every means within our power we shall point out that density of population, due to the increasing urbanization of the people of progressive communities, or it may be the density within a single house in a rural community, is the primary condition upon which tuberculosis depends for its spread; while on the other hand it must become a matter of every-day knowledge and experience amongst the common people that de-urbanization and life in the open air are the *alpha* and *omega* both of its prevention and cure. That I have singled out tuberculosis in no sense lessens the necessity for teaching that the same knowledge should exist regarding the acute contagious diseases; but it would seem that our people have become very generally aroused to the conditions of infection with regard to such.

As to density of population being a measurer of health I need not do more than give single illustrations from several sources. Dr. John Simon in his City of London Reports on the Dwellings of the Poor, wrote in 1850, "I described to you the miserable class of dwellings alluded to, courts and alleys with low, dark filthy tenements, hemmed in on all sides by higher buildings, having no possibility of any current of air, and (worst of all) sometimes so constructed, back to back, as to forbid the advantages of double windows or back doors and thus to render the house as perfect a *cul-de-sac* out of the court as the court is a *cul-de-sac* out of the next thoroughfare. "I affirmed that this could never be otherwise than a cause of sickness and mortality to those whose necessities allow them such residence, and assured you of the incontrovertible fact that subsistence in closed courts is an unhealthy and short-lived subsistence in comparison with that of dwellers in open streets. In habitations of this kind the death-rate would of necessity be high even if the population were distributed thinly in the

district. A single pair of persons with their children having such a court for their sole occupancy, would hardly be otherwise than unhealthy, the infants would die teething or would live pallid and scrofulous, or a parent would die prematurely, the father perhaps with typhus, the mother with puerperal fever. Judge then, gentlemen, how the mortality of such courts must swell the aggregate death-rate for the city, when I tell you that their population is in many instances so excessive as in itself and by its mere density to breed disease."

Another, and statistically yet more important illustration is taken from the New York City Board of Health Report for 1896. The facts summarized concerning Dr. Guerhard's investigation of the Fourth Ward in relation to tuberculosis are as follows:—

A three years' census of Ward IV. for 1894, 1895, 1896 gave the following results:

Total houses in ward	660
Average population to house (total population 48,323)	27.6
Total houses infected with tuberculosis	37.3
Total cases of tuberculosis	541
Percentage of cases to houses	81%
Cases per 1,000 population in 1894	9.4
" " 1895	8.7
" " 1896	11.2

Or from the records of deaths for eleven years in three old-settled Ontario counties, given in detail in the Annual Report of Board, 1892:—

Counties.	Total No. of deaths.	Total names.	Total names repeated.	Percentage of deaths to names repeated.	Average times such name is repeated.	Percentage to total deaths from all causes during 11 years.
				Per cent.		
Welland	404	285	71	25	2.67	10.21
Prince Edward	330	198	86	43	2.53	11.3
Lincoln	450	330	195	43	2.6	9.9

Another illustration may be taken from a statistical study guide in 1897 of the "Distribution of Tuberculous Diseases in Glasgow," by A. K. Chalmers, M.D., medical officer of health. The comparison is made between the periods inclusive 1881-90 and 1890-95. It was shown that while the general death-rate fell but three per cent. the death-rates from phthisis fell fourteen per cent. in the twenty-four statistical divisions in the city. With local variations owing to changing business conditions affecting the population, the following general statements are made, based upon the information:

1. The room-density of the whole city fell from 2.040 in 1881 to 2.033 in 1891 (or a decrease of seven persons per 1,000 rooms), and its phthisis rate from 268 to 230 per 100,000 living.

2. All districts, save one, having a phthisis death-rate above the mean, have a room-density also above the mean. St. Enoch Square district is the only exception to this, and the distributing influences there present have been stated.

3. In all these districts, save St. Andrew's Square, the room-density was greater in 1881 than in 1891.

4. Eleven districts have a phthisis death-rate below the mean; five of them have a room-density in excess of the mean, which is tending toward increase in three of them.

5. These exceptions are sufficiently large to show that the relationship between room-density and phthisis is not a simple one, and that excessive density is not at once responded to by an increased phthisis rate. But in nine districts where the room-density increased between 1881 and 1891 the phthisis death-rate fell 13.5 per cent., whereas in fourteen districts where the room-density was reduced, the phthisis rate fell sixteen per cent.

The facts set forth above form a statistical standpoint upon which the effects of room density are well illustrated in the scientific experiments of Flügge in an article in Zeitschrift für Hygiene. His conclusions are:

1. That owing to technical errors the older observations upon the rate of air movement necessary for the lifting of bacterial parasites into the air gave too high a figure as a unit. Flügge's observations place it at about four metres per second.

2. That once particles have been thrown into the air they remain floating for hours (six hours), and may be carried from one part of a room to another by currents of very slight intensity, less than two millimetres per second.

3. That bacteria-holding droplets of fluid are always thrown into the air by a fit of coughing, by sneezing or by loud talking, and these droplets are so small that they may be found floating in the air for at least five hours and are carried about by currents of exceedingly low intensity.

4. That slides supported in front of coughing consumptives are frequently found to be covered with tubercle bacilli either isolated or in small groups, and that they must have been associated with the small particles which Flügge found would float for such a time in the air.

5. That particles may be thrown a distance of thirty feet by an ordinary fit of coughing.

6. That experiments with the dust of dried sputum on animals have practically always shown that it is not possible to produce inhalation tuberculosis in that way.

7. That in those cows where inhalation infection has been successful, sprayed moist sputum has always been used.

He concludes that in diphtheria, scarlet fever, consumption, influenza, etc., there is more danger from the infecting agent thrown into the air by the act of coughing than from dust derived from the same material.

It will be of further interest, however, to approach yet nearer our subject, and *en resumé* indicate some of the results of experimentation as to the causes upon which these facts depend.

In Dr. Paul Regnard's recent work, "La Cure d'Altitude," are summarized in chapter I. the chief points relating to the chemical constituents of the air, and in chapter II. the micro-organisms in air are dealt with. He refers to the clouds of dust which are disseminated in the air by the wind, and indicates their almost innumerable constituent particles. Very many of these, as he states, are very minute, dry and unalterable. But there is yet more, one finds dry and distorted the germs of those micro-organisms which produce fermentations and diseases.

Bacilli, cocci, sarcinae, spirilla abound in the air which each moment penetrates into the deepest bronchioles of the lungs. He further gives the experiments of Pasteur, and notably those of Miquel of Montsouris, on the enumeration of the germs in the air, and who at the same time by culture media of various sorts, determine those which are living, as well as their species. Of these forms, Miquel states there are at Montsouris (Paris) fifteen moulds per litre, and that we inspire 150,000 of them daily into the bronchioles from what is as compared with house air, relatively pure air. There would be a million in the centre of Paris, or according to the season:

Winter	6.6	per litre of air.
Spring	16.7	" "
Summer	22.8	" "
Autumn	10.8	" "

Few however, of the moulds are injurious to us. It is different however for the bacteria of which so large a number are pathogenic. The number of these per litre is:

Winter	634	per litre.
Spring	433	"
Summer	825	"
Autumn	1,083	"

In the centre of Paris they become extremely abundant; they are equally increased within, as compared with the outside of houses.

—	Bacteria per centimetre.
Air over the Atlantic Ocean at 100 kilomm. from shore	0.6
At Paris, on top of Pantheon	200
" at Montsouris Observatory	480
" in Rue de Rivoli	3,480
" in a new house	4,500
" in sewers	6,000
" in an old house	36 000
" in La Pitié (hospital)	79,000

Thus a patient in *La Pitié* takes into his lungs 790,000 bacteria daily, or if the multiplication were made, he would in a month's residence inhale 23,700,000 bacteria. This is how we explain the contagion of so many maladies; this is how we come to understand the incessant bronchial secretion of certain persons, since the bacteria adherent in the mucus are constantly being cast out in the expectorations. When such organisms are not destroyed they are deposited on furniture, hangings, in the cracks of floors, while a gramme of such dust contains, as Miquel states, of micro-organisms:—

At Montsouris (Paris)	750,000
Rue de Rennes (Paris)	1,300,000
Rue Monge	2,100,000

While doubtless many of such are harmless, yet, as M. Regnard says, many are propagators of tuberculosis, of cholera, of typhoid fever, of anthrax, of puerperal infection, of erysipelas, of pneumonia, etc.

Such is a summary of facts regarding the microbic impurities of the air of inhabited areas, wholly in accord with the statistical facts already given; but it is of equal interest and importance to point out, as Regnard and others before him have done, that the air of mountains and other largely uninhabited areas is *poor in microbes*. Experiments begun by Pasteur in his early studies on spontaneous generation, which have been repeated, varied and refined by Giacosa, Freudenreich, Miquel, and many others in recent years, as those carried on in the high mountains of the Alps, have shown culture fluids to have remained sterile in many instances, or to have shown only a few moulds. They increase so soon as the neighborhood of habitations is reached.

To demonstrate, however, that the atmosphere purifies itself with great rapidity when we ascend above centres infested with microbes, Miquel has shown that on the tower of the Pantheon in Paris, at 100 metres above the street, the air is twenty times purer than at the ground, and progressively toward absolute purity with greater heights. This fact was neatly proven by M. Christiani of Geneva, who experimented by taking air-samples in a balloon, 3,000 metres above the city. Even at 1,000 metres he found that the air contained a very few germs; at the heights comparable to many health stations in the mountains he found the air to have an absolute purity.

In such regions everywhere, tuberculosis, unless when introduced, is practically unknown among the inhabitants, as shown by Dr. Baykie in the Himalayas, Guilbert in the Cordilleras, Antonio d'Abbadie for the mountains of Abyssinia, Schlaginteveil for the mountains of Thibet, and different observers on the foothills of the Rocky Mountains, and Jourdanet for the city of Mexico.

Such immunity of the natives, Regnard concludes, cannot be due to the surroundings of the native inhabitants, as often they are most insanitary. He further insists that at Davos, in the Engadine Alps, with its great crowd of consumptives spitting everywhere, to a degree of contamination beyond that of our cities, phthisis is not here contagious, "*très peu d'habitants ont été pris et presque tous ont gueri.*" That this statement is an extreme one, would seem proved by such evidence as that of Dr. Guitéras, of Zacetecas, Mexico, and different observers in the health resorts of the Rocky Mountains, where they distinctively affirm that the element of house infection does exist as a positive danger to otherwise healthy inhabitants. The real cause of such danger may be briefly summed up in the conclusions arrived at by Flugge, based on an extended series of experiments carried on by him, as already referred to and published. In view, however, of the abundant evidence provided from different sources by many writers, Regnard has without doubt authority for his statement that mountaineers seldom become affected with tuberculosis, due he affirms to the following several principal causes:

1st. The rarity of the infective agent (*B. Tuberculosis*) due, according to Freudenreich, to the degeneration of the bacilli by its life in cold atmospheres during many months. This is proved by exposing a culture tube infected with *B. tuberculosis* to cold, at least 6° Fah. for six months, thereafter infecting guinea-pigs, when they have been found to have lost their virulence, and do not produce the disease.

2nd. This is associated with another related fact that in every country, even where not elevated, where the soil is covered for a long time with snow, tuberculosis is comparatively rare.

3rd. That seldom are exposed persons, rich in blood constituents, inoculated with the disease, since the invasion of the bacillus is generally preceded by anaemia, paleness, loss of appetite and so on even in residents of the plain

country, and further that the resident of the mountain tends by experimental evidence to a condition of blood rich in red corpuscles, above even the normal in a dweller at low levels.

4th. That while a cold and fresh air prevails in the mountains even in the summer, there is the additional fact that in winter the mountain atmosphere is fresh and dry, with sunshine of great intensity.

During comparatively recent years the blood-making (haematopoietic) effects of mountain climates have been greatly studied experimentally, and we have to thank Regnard for having recently given us in his splendid work, the results of his own work and that of other students on the physiology of the "Climate d'altitude."

The one dominant fact, shown by all their experiments is, that such a climate tends directly through the effects of diminished atmospheric pressure to the rapid production of red-blood corpuscles, due as these experimenters have shown to the physiological demands of the system for an amount of oxygen, (for the oxygenation of the blood) greater than the normal number of blood-corpuscles at lower altitudes can supply. Paul Bert's and Regnard's laboratory experiments on animals, maintained under sanitary conditions for weeks in the Paris laboratory under a constantly decreased atmospheric pressure, as for instance, that equivalent to 3,000 metres of height, have proved a corresponding increase in the red-blood corpuscles in experimental animals.

The theoretical reason for the hypercythemia, may be briefly summarized from Regnard. The ascent of persons from the plain into the mountains is associated with the following characteristic symptoms for a number of days:

1st. Sensations of heat on arrival at mountain heights, with flushed face, turgid lips and lightly injected conjunctivae and itchiness of skin.

2nd. Sleeplessness, in those who have ascended the mountain rapidly by train, and especially in the anaemic and neurasthenic, generally disappearing however, after a few nights.

3rd. Palpitation and breathlessness; and especially at night when in bed, headache and vertigo.

4th. The appetite increases almost invariably from the day of arrival.

5th. There is in most a sensation of *bien être*; people become bright and gay, more enterprising, their ideas enlarge, and immediately feel like undertaking exercise often beyond their strength.

6th. Hysteria may easily happen in nervous women.

These symptoms disappear as follows:

1st. At the end of a week or so the skin still remains bronzed, and the sensations of discomfort disappear. The skin becomes rough aud scaly and the hair dry. Nasal and pharyngeal catarrhs rapidly improve.

2nd. Nervous sensations disappear, and sleep returns.

3rd. The dyspnoea and palpitation disappear, the breathing becomes normal, exercise may be taken without pain, and without fatigue.

To these several symptoms when in excess, most continental writers have given the term *mal de montagne* or mountain sickness, and while varying for different persons, it increases with increasing heights; but for most it is severe at 10,000 to 12,000 feet, although stated to vary notably in different mountain regions. Such may result in vomiting, colic and diarrhoea, perspirations, buzzing in the ears, syncope and insensibility.

Various mechanical, chemical and electrical theories have been advanced as to the cause of these symptoms; but as Jourdanet first thought and as has since been proved, it is due to a lessened oxygenation of the blood, due to a diminution of atmospheric pressure. Experimentally it is readily shown that the percentage of both carbonic acid and oxygen disappear under lessened pressure as first definitely proved experimentally by Paul Bert. Thus if at 760 millimetres (30 inches bar.) the blood absorbed 20 c.c of oxygen; at 370 it only absorbs 16.5 c.c; at 200, 13 c.c.; at 30, 7.4 c.c. The lessened capacity of blood for the absorption of oxygen is much the same, whether in the blood drawn or in the blood of the living animal.

Thus as Regnard remarks, "There is then anoxyhaemia in him who ascends the mountain, and thus anoxyhaemia is further the cause of the *mal de montagne*. A further experimental and observed fact is added, that exercise, by using up oxygen in the tissues, produces the sickness sooner than when the person or animal is at rest.

Since, however, this sickness passes away if the person continues to reside in the mountains, the story of the cure is, that gradually the physical system compensates for the lessened capacity of the blood for absorbing oxygen by an increase of the red-blood corpuscles. Paul Bert calls it the *theory of hyperhemoglobinhaemia*. It consists in supposing that the hemoglobin has augmented in quantity in the blood, in such a manner that persons at such heights have in their blood the same quantity of oxygen as at lower levels, and that thus the blood defies the lack of oxygen (anoxyhaemia).

The actual results of the experiments of Egger of Bâle, in 1891, who on account of health lived for a time at Arosa in the Alps, may be quoted. He experimented with persons coming directly from the lower levels. He examined their blood the day after their arrival, and subsequently at the 15th day, temperature, etc. He examined 27 persons, (21 men and six women) of which two were neurasthenics, two chlorotics, 14 tuberculized, nine in good health. In all he noted a considerable increase in the red-blood corpuscles. Thus in 15.5 days, the number of corpuscles had passed from 5,400,000 to 6,290,000 in a cubic millimetre of blood. In the well the increase was 702,000; in the tuberculized, 982,000. He then asked himself as to the cause of the increase? They had not altered their manner of life. In the same manner, rabbits from Bâle were sent to Arosa, and Egger found that after three weeks the corpuscles had increased from 6,770,000 to 7,770,000, or 17.4 per cent. He further found that the number of corpuscles in healthy poor persons living at Arosa, was notably greater than in persons living at low altitudes. Thus this augmentation is permanent.

Egger found that his blood which at Arosa rose to 7,300,000, fell on his return to Bâle to 5,600,000 after fourteen days' residence, and in the rabbits from 8,400,000 to 5,800,000. Mercier and Viault similarly found that on descending to the plain, the corpuscles decreased again to their normal, and in the instance of Mercier, they increased within a week to their previous number. As might be expected, says Regnard, this augmentation of the respiratory elements of the blood, does not take place without its making itself felt in every organic function.

Respiration, circulation and the general nutrition are actually influenced by the sudden activity in hæmatopoiesis. The respirations are increased for a week or more, since the increase in blood-corpuscles has not yet resulted, and the

poverty of the air inspired in oxygen must still be compensated by a forced activity of the lungs. This activity lessens when the compensation in blood-corpuscles has been effected.

That the increased respirations result in a larger quantity of air traversing the lungs is graphically set forth by Veraguth (Diagram, page 173. Regnard's Cure d' altitude).

Similarly the pulsations of the heart are increased, as proved by Jaccoud and others, often to fifteen to twenty per minute. The question of intra-arterial tension, so closely associated with this, is described by Reguault, who denies the opinion, expressed generally *à priori*, by so many who have taught that hemorrhages ought naturally to follow the lessened external pressure. He states that hemorrhages in the mountains are quite exceptional, and the physicians of Davos affirm that nothing is more rare.

Egger explains the reason thus, viz.: that the lessened pressure on the surface of the body extends equally to the whole body so that no vessel can dilate.

In 1612 phthisical cases tabulated by different observers, 917, or 56%, had bad hemorrhages; 697, or 43%, passing hemorrhages. Of the latter 697, hemorrhages occurred before sojourn in mountains, in 572 before and after sojourn in mountains; in 90 only during sojourn in mountains, and in 33 only during sojourn in the mountains.

He further says that if altitudes, as 1,500-1,800 metres, tend to produce hemorrhages it ought to be shortly after or immediately on their arrival there. It happens, however, that this results but seldom.

As regards nutrition, the changes in the composition of the atmosphere and in the increased hæmatopoiesis should have an intimate relation to nutrition. Such is found to be the case. Thus from the experiments by many workers Regnard sums up the results, viz.: *That when the atmospheric pressure diminishes the oxygen supplied for organic combustion diminishes. Then the red corpuscles begin to increase and soon the normal condition of tissues is restored, and even passes the normal. It is certain, then, that in the mountains the appetite. stimulated by the fresh air and walking, determines a more active nutrition and more intense combustion. Similarly, there is an excess in the moisture given off in the mountains by pulmonary respiration. Probably, however, there is a tendency to increase in weight by residence in the mountains.*

As regards the influences of mountain heights in the case of disease, Regnard from the many experimental observations I have referred to, naturally proves first a *hypercythæmia*, or an increase in the red blood corpuscles. This increase seems to remain to some extent even when the sick return to a lower level. The result of this increase in the richness of the blood in hæmoglobin is to restore the tissues, to augment their oxidation and to cause a person to have more energy, while defective nutrition tends to an improvement. The energy of the digestive functions is restored. The defective respiration observed in many who are anæmic and have muscular weakness is notably enlarged in these regions of lessened pressure, and with the improvement there is the reasonable hope that it will maintain itself constant. In popular language we may say that the mountain climate hardens the individual, and hence he becomes more resistant to inoculation with the microbes of disease.

From this extended *resumé* of the physiological effects of high altitudes, and of the mode of nutrition and cure in disease dependent upon the hypercythæmia as due to residence in such regions, we have indicated not alone the conditions

making for health under such climatic influences, but we have illustrated what would appear to be the processes conducive to a high degree of health at all or any altitude. While the experimental evidence goes to show that the red blood corpuscles are a *sine qua non* to a condition of good health at high altitudes it does not mean that a necessarily better condition of health exists there than at the other altitudes with or in good sanitary surroundings. Regnard while indicating the physiological effects of high altitudes, likewise points out very clearly that mountain climates possess other qualities found in very many localities at low levels. Some of these conditions are :—

1st. Winter climates, with long periods during which the ground is covered with snow.

2nd. Equability of climate where, as in the forests of Canada, rapid changes of weather are notably ameliorated by these wooded areas, while high winds are of comparative infrequency.

3rd. Dryness of the atmosphere, as in the great prairies of the Canadian North-West, while the continuous cold with a moderate snow-fall is associated with a dry, highly ozonized atmosphere and with much sunshine.

4th. Wide plateaus even at low levels, as within the coast range of mountains of the Pacific coast of Canada, where, with a continuous cold weather in winter, there is but a light snow-fall, while a very small rain-fall makes up the balance of the year. Such conditions are necessarily associated with an intense sunshine all the year round, which makes a life practically in the open air continuously possible, and, therefore, the conditions for exercise and oxygenation of the blood present in the highest degree. There is in such a climate a notably less prevalence of high winds and of extreme temperature variations than at high altitudes, while the dryness of the air ensures as in the mountains a free peripheral blood circulation.

5th. The purity of the air dependent upon freedom from micro-organisms, as an essential quality of the atmosphere of such climates, exists in these latter cases both from the fact of a sparse population and the existence of the preceding conditions, all unfavorable to the multiplication of micro-organisms.

That the action of the solar rays plays a most important part in this climatic freedom from micro-organisms, whether on mountain or in the plain, has been well illustrated by many experiments, some of which are set forth in chapter II. in the Annual Report of your Board for 1895. Most notable are the experiments of the botanists, Marshall Ward, of London and Buchner, of Munich, wherein they showed that culture plates inoculated with bacteria were sterile when exposed to direct sunlight, but that the microbes grew well, when such were protected against the direct rays of the sun. Thus, in such climates as those of the Okanagan and Thompson valleys of British Columbia, we have not only the sunlight but the destructive influences of winter cold upon bacteria, in the same manner as such influences operate in the mountains and foot-hills, whether of the Alps or at such resorts of the Rockies as Calgary or Edmonton.

But further, Marshall Ward has shown that these germicidal effects of the sun's rays are due to the blue-violet and ultra-violet rays, the last in greatest intensity. How far the action of the sun's rays are conducive to an oxidation of the blood in the capillaries of the skin, is a most interesting problem in connection with our present study, and one very difficult of experimental proof, compared with that of the cell-life of plants. That it is notable, however, seems clear from the tanning and bronzing effects which intense insolation, whether in summer or winter, produces upon the skin of those much exposed to the sun's influence.

Such influences affecting the peripheral circulation are still further notably influenced, as are now known, by the ordinary measures of personal hygiene, as exercise, massage, bathing with frictioning of the skin, all which by increasing arterial tone are important adjuncts to the maintenance of health in the well and of improving it in the weak.

Without extending further the many illustrations which might be given of the all-important part played by the purity of the air in which any population lives, in determining its immunity from disease, and in temperate climates notably of freedom from phthisis, essentially a disease of mal-nutrition, it becomes of supreme interest for us to know that nature has supplied in most climates conditions which enable man to protect himself against the conditions, tending, as in house atmospheres, to the development of diseases of mal-nutrition, rst amongst which is this contagious one of tuberculosis. We need not statistics to prove to us how different the every-day habits of life in southern climates may be, as compared with those of the cold north.

To say that in the cities of the tropics on all the continents tubercular diseases prevail, is but another way of saying that house density, as in India or China, exists in such cities to even a greater degree than in northern countries; to which may be added the general absence of progressive sanitation, and of habits and means of life tending to produce a strong physical constitution. Generally it might be said that give to our cold north, with its progressive people, the climate of the south, and we, with our sanitary methods and hygiene, might be almost expected to eradicate in a comparatively short time this scourge of the peoples. One thing, however, is manifest that, as has often been said before, not only must we limit the positive dangers of house infection from existing cases, but municipal and state control to a degree which has hitherto not existed must be exercised to limit or prevent those industrial conditions which inevitably tend to produce *candidates for consumption*. Equally with such measures must we deal with the problem of supplying to those who in every county may have become inoculated with tuberculosis the means whereby they may be saved to their families and country. A previous chapter has pointed out the field of work which in our county areas lies before the county medical officer of health, who, trained for a life-work, shall devote himself thereto, within an area, where he shall be able to see his work growing under his hand. Within such an area, where such an officer may well have his finger daily upon the pulse of a dozen of our smaller, progressive, well-to-do communities, I seem to see how, not only regulating the dwelling houses, the workshops and factories of his area, so that not a single man or family shall be able to say he is ignorant of what makes for his own and his family's health, but exercising so positive a sway that where the error of life, *whether of the man or his parents*, has resulted in the appearance of disease, such officer shall be able not only to point to the means of probable escape from the penalty, but shall be provided with such homes as Dr. Richardson spoke of when he dreamed his City of Hygeia, where, with lives regulated by the firm, strong yet kindly hand of the master of the science of medicine, those who may have taken as yet but a few steps along the pathway of physical declension, will feel the returning vigor,—*vis medicatrix naturæ*,—supplied by the kindly mother, whose benisons are ever for those who can, and who would accept them. The century in which she has brought out from her treasure house so many marvellous gifts, would surely be untrue to those which have preceded, and to the purposes which through every one of them have now glimmered, or at other times shone as radiances from the thread of gold, linking them all with the first, as illustrating the hand of the Creator in His creation, did there not appear there-

with evils from the Pandora box of ills to teach that the *iter ad astra* can be only through human endeavors; that when He shall have "made the pile complete" this earth with its inhabitants shall have become fitted for that future to which "the whole creation moves," when physical and moral evils shall have been eradicated from the surface of the blossoming earth, and man, by his own self-conquest, shall sing pæans of victory over those ills which have been sent for his uplifting.

"Oh yet we trust that somehow good
"Will be the final good of ill,
"To pangs of nature, sins of will,
"Defects of doubt, and taints of blood."

"That nothing walks with aimless feet,
"That not one life shall be destroyed,
"Or cast as rubbish to the void,
"When God hath made the pile complete."

P. H. BRYCE, M.A., M.D.,
Secretary.

PART II.

I. CHAIRMAN'S ANNUAL ADDRESS.

By J. D. Macdonald, Hamilton.

January 28th, 1898.

To the Members of the Provincial Board of Health:

Gentlemen,—It is, I trust, with thankfulness to a kind Providence, and with sentiments of pleasure and good fellowship, that we meet again at the beginning of a new year. We meet, I am sure, with the resolution to continue to give our best attention to the duties committed to us, duties, the importance of which cannot be estimated too highly. We reassemble, I am sure, resolved to make the benefits of good sanitation more and better known and appreciated throughout our land, to make it plain that the work of our Board is beneficent work, and that the more perfectly all parties acquaint themselves with the acknowledged principles of sanitation and reduce these principles to practice, the better it shall be for all. The Board may congratulate itself on having been, in some degree, serviceable in this direction already, and we may express a hope that as knowledge in our sphere of duty grows, and skill in the application of that knowledge becomes more perfect, this Board shall be found not to have been of those which lag behind in the fulfilling of all that is expected of it.

Our duties for the year just passed, it may be said, have not been onerous, and it is thought that for the favourable sanitary state of the country some credit may be taken by the Provincial Board of Health on account of the sanitary information which it disseminates, and the practical assistance and advice which it has afforded in instances when outbreaks of infectious disease have been brought under its notice: and we have to acknowledge, on the other hand, that such assistance and advice as have been given have been thankfully received and acted upon.

It may be well here to notice the excellent understanding existing between the local Boards throughout, and the Provincial Board, the latter always enjoying the support and countenance in its operations, of the officials and dwellers in localities wheresoever occasion may have called for its interference.

As a mark of the improved sanitary state of the country, it may be stated that gradually the direct interference of the Board is becoming less frequent. The interest in sanitation on the part of the people is growing and thus good hope may be entertained that in due time all opposition to or neglect of sanitary measures will meet with deserved reprobation. That time, however, has not yet fully come, and conditions arise in which they whose duty it is to guard the community from importation of infectious disease, have their endeavours to that end angrily opposed. As an example let me cite that of a body, dead of an inflammation of the fauces associated with fever, sent from an institution in Boston, in which several deaths had occurred, with similar symptoms preceding, which was sent to Hamilton certified as having died of septicaemia, the certificate having been granted on the negative evidence that in microscopic examination the Leoffler bacillus had not been found. Against such a dangerous proceeding as that adverted to, the indignation of a well informed society is a better safeguard than the coarser means of legal penalty, and it is one of the offices of such institutions as we, who are here, form, to advocate society to use its powers. There are occasions when public opinion, being enlightened, is stronger than legal process. I

will be a matter gratifying to the Board to know that in the past years there has been much diminution in the prevalence of infectious disease, and there is good ground for the persuasion on our part that this happy condition of things can be justly attributed to the care and provisions of the health institutions of the land. The value of these institutions is becoming more and more apparent the longer they exist, and again it is hoped that further experience of their beneficial influence will bring about a more ready compliance on the part of all with those rules which it is the function of health institutions to devise and to obtain the enforcement of.

In the Board some valuable literary work has been done, in the reading by several of its members of papers and reports which had a bearing on subjects of interest in its work. Able and full papers were contributed by the Secretary and Mr. McKenzie, the bacteriologist; by Dr. Kitchen and by Dr. Cassidy. In these, subjects of importance were dealt with, such as rabies and its occurrence in Canada, disinfectants, notably formaldehyde, and the especially important subject of the water supply of towns, and the relations thereof to the occurrence of typhoid fever. It need not be said that diphtheria, that ever present plague occupied time and attention, although no paper upon it was necessary; but the class of victims which it, for the most part, selects, its painful symptoms and its great fatality always secure to it a large share of the time of the Board, as does also the selfish indifference with which those bereaved by it convey their dead among communities which are as yet uninfected; and thus make possible the extension to others of the suffering which they so much bemoan in their own experience. Let us hope that as time passes, and thought comes to be given to the nature and purpose of preventive medicine, we shall all, even in circumstances the most grievous to ourselves, have respect to its requirements. Grief is often inconsiderate and selfish, but is no excuse for hazarding the infliction upon our neighbors of sorrows equal to our own.

In dealing with infection and the diseases arising therefrom, the Secretary in his report will enter into detail with respect to those diseases which most prevail, and he will show that as the result of certain sanitary precautions much suffering has been escaped and many lives saved. Prevention has been a successful work.

There is reason too to hope that means have come to light of aborting the dread diphtheria. The opportunities of testing have as yet been comparatively few, and it is possible that, for a time, the disease may have become less malignant, but meantime it appears as if by the injection of antitoxine diphtheria can be so mitigated as to be no longer a dangerous, or rather, an unmanageable affection. It would appear that in antitoxine for diphtheria, we have nearly a parallel to vaccine as a preventive of smallpox, and quite a parallel, in that, in this other cruel disease, it affords a relief to humanity equal to that brought to it a generation or two ago when vaccination was found to afford an escape from the terrible mortality of smallpox, as well as from the disfigurements which old men amongst us remember as marking so many of those who survived it.

II. REPORT OF THE COMMITTE ON EPIDEMICS.

May 6th, 1897.

Mr. Chairman and Members of the Provincial Board of Health:

GENTLEMEN,—Your committee begs to report that the past quarter has continued to show the absence of any notable prevalence of the more severe types of contagious disease, excepting scarlatina, which has been more than usually prevalent in Toronto, St. Catharines and one or two other centres. That the mortality per cent. of cases has been low, may be gathered from the following returns:

	January.	February.	March.	Total.
Deaths in Cities	5	13	16	34

Diphtheria.—While the disease has been present, the total deaths during the three months as compared with the three preceding, show no marked prevalence, while the deaths from it in the cities have been, on the whole, low.

	January.	February.	March.	Total.
Deaths in Cities	30	46	23	99

There have not been wanting, however, evidences that while the incidence of these diseases has on the whole been small, this perhaps has been due more to the individual action in some cases of the attending physician, than to the activity of the local board of health. This condition referred to in the last quarterly report of your committee, is accentuated perhaps by such a statistic as the following, showing the nominal cost of work done in a single county:

Municipality.	Population.	Expenses in 1896 by Boards of Health.	Expenses per head.
Township of York	23,257	$506 00	$2\frac{1}{10}$ cents.
" Scarboro'	4,028	66 00	$1\frac{3}{10}$ "
" Markham	5,681	Nothing.	.....
" Vaughan	5,292	83 00	$1\frac{8}{10}$ cents.
" Etobicoke	4,557	103 00	$2\frac{3}{10}$ "
" King	6,067	69 00	$1\frac{1}{10}$ "
" Whitechurch	4,019	12 00	$\frac{3}{10}$ "
City of Toronto	200,000	30,000 00	15 "

Or again by the point which has been raised as to the requirements of section 83, sub-section 4 of the Consolidated Public School Act, in the matter of the inspection of unsanitary school premises by the medical health officer on the request of the county school inspector as referred to in correspondence submitted.

It will be seen both from the statistics given and the question raised, that the municipal mind is especially concerned on this question of the salary of a medical health officer. It is not perhaps so much whether the money should be spent as to who should be paid, for in one of the cases referred to the members of the board for hearing the medical health officer's report on schools, were receiving a per diem allowance, while objecting to his fees.

From all this it is apparent that there are several questions raised.

1st. Is the work of reporting, isolating and disinfecting in cases of contagious disease a municipal necessity.

2nd. If so, is the existence of a medical health officer necessary to supervise in these matters.

3rd. Is such an officer to perform such duties in a regular manner, or only when things get so bad that the municipal authorities fear public disapproval for further inaction.

4th. Is such an officer to be paid a sufficient amount of salary to really encourage him to do the work, or must he simply look for a fee, when specially ordered to act.

5th. Is the work he does really worth what, as a physician, he thinks proper to charge.

On complaints made to your committee only last week, by one of our larger cities, regarding the danger from the inaction of the township adjoining the city, it was pointed out that the sanitary inspector got $15.00 a year and the medical health officer nothing.

With these facts and problems before us, which illustrate the prevailing views in many parts of the country, your committee is quite prepared to observe the logical outcome of this state of affairs in the legal action which is reported in the case of a ratepayer of a township near Barrie, for damages for $10,000.00 for neglect, which, it is averred, resulted in the death of his four children from diphtheria. Your committee will await with interest the decision of the courts in this matter, but it may be remarked in passing, that English decisions are quite clear as to the location of responsibility.

The question is, however, enlarged when one municipality doing its duty may find it necessary to seek damages for municipal neglect on the part of another. This point seems to have been definitely settled in two suits which have already taken place in this Province, so far as direct transmission of a person suffering from contagious disease from one municipality to another, on the order of the Board of Health, is concerned; and it remains to be seen whether official inaction or neglect to perform duty whereby transmission of disease from one municipality to another, as by infected milk from non-isolated premises where scarlatina or diphtheria is present, is a subject for damages.

The reasonableness of the argument as to municipal responsibility seems plain. The statute limits the power of a municipality to protect itself in cases of contagious disease outside of a one-mile limit beyond the municipal boundary, apparently on the assumption that the neighboring municipality is taking sufficient action. The extent of such municipal responsibility once recognized, and it is apparently impossible to draw the distinction between sins of commission and sins of omission, it must necessarily have a widespread application in so far as those diseases are concerned which are specifically referred to in the Public Health Act. Take the case of tuberculosis transmitted by milk. The Act requires and particularizes municipal inspection of animals and their products intended for food, by local boards of health. Can the neglect to prevent the distribution of such milk, where a herd is known to have tuberculized animals, be held to be a legal cause for damages where it can be proven such milk is sold?

The more easily detected case where scarlet fever or diphtheria being on the premises, and milk therefrom is allowed to be sent to a neighboring municipality and sold in houses where scarlatina cases occur as a probable result, is one of immediate interest and importance. Doubtless action in some such case as the one referred to, reported recently, will cause the various questions of responsibility to assume their relative positions from the legal standpoint.

Going incidentally from the discussion of this subject, your committee begs to refer to its last quarterly report, February 10th, 1897, in which the following paragraph occurs :—

"*Animal diseases.*—The quarter has been notable for having seen the Board's efforts successful in obtaining such an Act and regulations made under it as will, it is trusted, speedily place the whole work of inspection of dairy cattle and abattoir inspection in the Province on an advanced and satisfactory basis."

The Board's satisfaction as expressed in this paragraph has however been short lived, in view of the action which has been taken by the Legislature as expressed in the following clause :—

"The operation of section 4 of the Act to provide for the Inspection of Meat and Milk Supplies of Cities and Towns passed in the fifty-ninth year of Her Majesty's reign, and chaptered 63, is hereby suspended and no proceedings shall be taken under the authority of the said section until the close of the next session of the Legislature."

Without criticizing the action which the Legislature in its wisdom has deemed it proper to take, it will not be without profit that your committee reviews the action taken by this Board in its efforts to limit the prevalence of tuberculosis.

The following papers *re* consumption and tuberculosis have been prepared and published by it .—

1882.—Why so many People die of Consumption (paper).

1882.—Report on Model Dairies.

1885.—Cheese Factories.

1887.—Report on Inspection of Public Milk Supplies.

1888.—Inspection and Regulation of Public Milk Supplies.

1888.—The Contagiousness of Consumption (paper).

1889.—Report on Actinomycosis in Cattle.

1889.—Report on Inspection of Cheese Factories and Dairies.

1889. Bulletin prepared on Tuberculosis.

1889.—Tuberculosis as a Zymotic Disease.

1892.—How consumption is spread, and some measures for its prevention.

1894.—Influence of Climate on Prevalence and Cure of Consumption.

1894.—Report on a Home for Consumptives.

1895.—Review of the Elements entering into some Canadian Climates in relation to Tuberculosis.

1895.—Report of the Committee on Epidemics on a Home for Consumptives.

The following papers, resolutions and regulations regarding inspection of cattle and dairies :—

1891.—Milk Supply Problem from the Public Health Standpoint, and some practical methods for securing safe public supplies.

1895.—Report of Committee on Foods and Drinks, *re* Inspection of Cattle, Meat and Milk.

1895.—Contagious Diseases in Cattle, and Cattle Inspection.

The following Acts regarding inspection of animals and their food products have been passed :—

1896.—Act relating to the Inspection of Meat and Milk (Pamphlet No. 1, 1896).

1890.—An Act to amend the Public Health Act respecting the sale of meat and milk from animals affected with tuberculosis.

1891.—Act to add Actinomycosis to the list of contagious diseases of cattle.

1895.—Act to inspect meat.

1896.—Act relating to the inspection of meat and milk.

In addition to these Acts there has been in existence since 1887, and prior thereto, the Animal Contagious Diseases Act of Canada, which not only prohibited the sale of any animals affected by any of the several diseases mentioned therein, but a penalty of $200 was attached therefor. Whether such laws have been enforced or not, or whether provisions for their enforcement existed either under Provincial laws or Dominion statutes need not here be discussed, but it certainly was upon these accumulated health enactments, giving powers to Federal, Provincial and Municipal authorities, to take steps for stamping out what all these enactments specifically state to be diseases dangerous to the public health, that your Board urged with success that the Act of 1896 should be passed, supplying specific methods whereby this desirable inspection should be carried out by every city and town which choose to take action for the protection of its own citizens.

With this brief *resumé* of the Board's efforts for the limitation of the prevalence of tuberculosis, the Board will not certainly be accused of having overlooked its plain duty in the matter as guardians of the public health; neither can it from the mass of literature published by it dealing with the subject from every standpoint, be looked upon as not having fully realized what the measures advised by it implied in practice. It has too often, during the fifteen years of its existence, realized that infectious diseases can be eradicated only by removing the cause to have any doubt as to whether the methods which have been followed by it, and all other foremost scientific authorities, are alone those which will be found efficient to deal with the disease.

The Board must therefore leave with those who have undertaken to deal with this matter the responsibility of such action as is demanded by the situation.

III. REPORT ON CONTAGIOUS DISEASES FOR THE QUARTER.

July 23rd, 1897.

To the Chairman and Members of the Provincial Board of Health:

GENTLEMEN,—Your committee take pleasure in reporting that the general sanitary condition of the Province since its last report has continued good, and that with two or three exceptions no extended local outbreaks of disease have called for extended action.

Smallpox.—As has been set forth in the public press, cases of smallpox have occurred both in Winnipeg to the west and in Montreal to the east. The first outbreak certainly, and possibly the second, was due to the introduction of the disease by Chinamen, who passed through from Vancouver eastward about the 22nd of May. Although vaccinated and so personally protected, they seem to have had infection either on their person or in their baggage. The Montreal cases occurred at the beginning of July, and the source of their inoculation seems still in doubt. At present the dangers of smallpox to Ontario are lessened by its inland position, and by the fact that immigrants for the North-west are most likely to either sicken on ship-board or after they have arrived at their destination. Yet it cannot be overlooked that as the tide of immigration from both east and west seems to be again setting in toward Canada the dangers which for several years past have been small will again increase. Thus it was reported recently from Winnipeg that a serious outbreak of scarlatina had appeared in a new settlement of

Galician immigrants in Manitoba, and the authorities of Winnipeg are seriously alarmed at the prospective cost of having to deal with outbreaks brought to them in this manner. In my recent trip west I learned of three cases of leprosy having appeared amongst Icelandic settlers in that province.

Typhoid.—In May several communications were received from the provincial authorities of Manitoba regarding the dangers to Winnipeg of the transportation there of a very notable number of typhoid fever patients from Rat Portage, our growing border town of the west. The situation there appeared so serious that your Secretary went at once, on the 19th of June, to investigate the reported outbreaks. The facts as stated in correspondence were largely confirmed, and the mayor, medical health officer and local board were found fully alive to the necessity for dealing promptly with the outbreak. A small but neat hospital has been erected and was opened during the time of the visit of your Secretary, who made suggestions on various points, regarding especially the source of water supply and disposal of sewage. The undoubted cause of the outbreak is due to the fact, first, that the general public have utilized the water supply from the Lake-of-the-Woods on which the town is situated by either going to the shores and dipping up water from the bays or by pumping it by hand at the town pump with a pipe some 159 feet out into the lake, or in several cases of hotels by pumps on the premises, either steam or windmill. The sketch herewith presented shows the position of the town and its two bays. The second cause is due to the irregular rocky surface of the town in many parts, making soakage from privy toward low grounds rapid. There are in some places polluted wells, while in others private drains which lead house sewage either to a creek which acts as an open sewer or directly to one or other of the bays. The dark waters of these lakes contain vegetable matter, and there is no room to doubt that the sewage polluted bay water has been the direct cause of the outbreak.

Your Secretary met the board of health and the council and urged taking prompt action in view of the facts to prevent the use of these bay waters, notably those of the town bay, but impressed upon the council the urgent need for a public supply. He also addressed a public meeting of citizens on the subject of the sanitary needs of the growing town. With the town engineer and mayor he likewise went over the ground, and advised that the town supply be taken from the lake, at a convenient point well above any prospective source of pollution. He is hopeful that a water main will be laid and a pumping plant established this summer whereby from hydrants conveniently situated the homes of the people may be supplied with a safe source of supply. The town of Fort William, which for some time has been endeavoring to obtain a public water supply, and which has been using water largely from the Kaministiqua River in front of the town, was also visited by your Secretary, and the source of the proposed supply up the river was investigated. A public meeting of citizens was addressed by him, and it is with pleasure that he can state that on the 15th of July a by-law was passed by the town for $35,000.00 to at once establish a public town supply of water. It is with much satisfaction that your committee notes these several movements for improving the sanitary conditions of the growing towns of the Province.

Scarlatina.—As was remarked in the report for the quarter at the February meeting.

"The monthly reports indicate that in several municipalities scarlatina has shown a more than average prevalence during the quarter. Fortunately the outbreaks have been generally mild." The outbreak in Toronto then referred

to as existing in January continued to progress. The several months of 1897 have had the following cases reported and deaths occurring :

January, 1897	cases	104	deaths		3
February, "	"	172	"		13
March, "	"	265 (to March 16th)	"		15
April, "	"	205	"		11
May, "	"	212	"		11
June, "	"	180	"		10
		1,138			63
July to date, 21st		50			

It thus appears that, for the first time during fifteen years, Toronto has been visited with a widespread outbreak of scarlet fever, and it is of much interest and of the greatest importance where the Province has been practically free from this disease for so long a time to review some of its chief characteristics.

Its history shows it to be a remarkable disease. Its mortality in London from 1859 to 1870 was variable, but reached its height in the latter year, the death-rate being 1.22 per 1000, and dropped in the succeeding year to .27 per 1,000. Since that year the death-rate per 1,000 has with slight variations steadily declined :

Year.	Cases notified.	Percentage of deaths.	Deaths per 1,000	Cases, rate per 1,000 living.
		%	%	%
1891	13,000	5.1	0.14	2.7
1892	26,363	4.3	0.27	6 4
1893	36,953	4.3	0.37	8.6
1894	18,495	5.2	0.22	4.2

Of these total notified cases the following percentages were treated in the metropolitan Asylums Board hospitals in each succeeding year :

1890	43 per cent.
1891	46 "
1892	49 "
1893	34 "
1894	64 "

The percentage of mortality according to the age is most important. From a total of 69,752 cases admitted to the metropolitan Asylum Board hospital, from 1871 to 1893, the average mortality was 8.3 per cent., but of these cases :

Under 5 years,	19,595	18.2	mortality per cent.
5 to 10 "	28,763	5.6	" "
10 to 15 "	12,444	2.6	" "

It will be seen from these statistics that the present epidemic in Toronto has much the same character, as regards severity, as these great numbers in London during the last five years.

In the great proportion of these cases where it has been possible to prove exposure, the period of incubation after a single exposure and the first feverish symptoms has been two, three or four days. The feverishness and sore throat may begin within forty-eight hours of exposure. Dr. Caiger, medical superintendent and lecturer on infectious diseases at the south-western Free Hospital, (Metropolitan Asylums Board) says: "The period of incubation is sometimes as long as five days, and in rare cases even six," but he says: "I have never met with an instance in which there was any valid reason to believe that the period had been longer than six complete days. It may be confidently stated, that, if the first case was properly isolated and the necessary measures for disinfection scrupulously carried out, the safety of the other members of the family is practically assured if no second case has arisen before the end of a week." He had under treatment altogether, in 1894, 2,728 cases.

The cases are capable of carrying infection from the very beginning of the sore throat and febrile symptoms, says Dr. Caiger, and that, "it is a good rule in practice to regard six weeks from the rash as the minimum period of quarantine. Whether longer is necessary depends largely on the peeling of the soles of the feet and the cessation of the mucous and other discharges."

Dr. Gayton, medical superintendent of the North-western hospital, who had charge of 1754 patients (scarlatina) in 1894, says: "The comparatively low death-rate of this disease as compared with that of fifteen or twenty years ago is much cause for satisfaction, and facts show clearly that the real cause of the enormous fatality in past times was that the cases were *treated* (so called) at home, where they could not in the majority of instances be properly isolated. Hence all the authorities of later times have come, more or less, decidedly to this conclusion that all, or nearly all, zymotic diseases should be transferred to hospitals set apart for the purpose, so arranged that each different kind of disease can be isolated in separate buildings or separate wards; indeed hospital treatment seems to be one of the most immense improvements ever introduced in medicine, and the means, which, when combined with others, will lead in time, if not to the extinction, at least to a most marked diminution of attacks."

Having thus summarized the principal facts which are thus associated with any epidemic of scarlet fever, it will be of interest to examine the epidemic of the last six months in Toronto in connection with these various points.

1st. The progress of the epidemic from month to month is seen in the following table:

1897.	Cases reported.	Deaths.
January	104	3
February	172	13
March	265	15
April	205	11
May	212	11
June	180	10
	1,138	63

Of these 35 or 40 per month were treated in hospital and the balance were treated in their homes. The total death-rate was 63 or 5.5 per cent. Taking the

returns for the month of May supplied by the city health officer up to the 6th of June, there were, in all, 280 cases. Of these, 198 attended school. They were in attendance, in all, at 47 schools. Of these schools the following schools had :

Huron	9	cases.
Landsdowne	10	"
Jesse Ketchum	9	"
Dufferin	7	"
Ryerson	14	"
Brock Avenue	11	"
Model	20	"
Queen Victoria	11	"

—— a total of 91.

From the report of the medical officer of health of London, England, we obtain the following :

Of 17,704 cases notified in 1893, there were

5,279	under	5	years	of age.
6,727	"	10	"	"
3,187	"	15	"	"

or 53.2 per cent. were under 5 years, or under school age, as compared with those under 15 years, or 29 per cent. of the whole were under 5 years.

Comparing the cases from May 1st to the 6th of June, in Toronto, we find 65 under 5 years, not in attendance at school, or 20 per cent. of the whole, or

20	per cent. of the whole	under 5, not at school.
70	" "	attending school.
10	" "	older than school age or reported not in attendance.

We thus see that while 70 per cent. of all the Toronto cases studied were in actual attendance at school, there were only 50 per cent. of the London cases of school age, that is 5 to 14 years, inclusive. Or there were 20 per cent. more cases amongst school children in Toronto than in London.

To show the extreme importance of the public schools in the spread of infection, the Medical Officer of London makes a table with three groups ; 1st, under 3 years ; 2nd, from 3 to 13 ; 3rd, over 13, and compares the prevalence amongst them for the month preceding, the month of the summer holidays and the month succeeding with the result :

Under 3	Decrease in	holiday month	1	per cent.
3 to 12	"	"	26	"
Over 13	"	"	13	"

Increase in succeeding month :

Under 3	4	per cent.
3 to 13	65	"
Over 13	26	"

It is thus made apparent that the results of the numerous modes of communicating infection amongst the infant population under 5 years, or 11 per cent. of the whole population fails to create an increase or decrease in any month exceeding 4 per cent., but that the absence of the school influence at once makes a decline of 26 per cent. and a subsequent immediate increase when school opens of 65 per cent.

It would seem, therefore, a natural inference that July in Toronto should show a notable decrease of cases, and with another month of holidays a still greater decrease, and if the full effects of the six weeks required to complete desquamation is obtained we ought to expect the schools to open in September with a good chance of freedom from infection, and it is hoped that such measures will be taken that they will remain so. The figures for July to the 21st give fifty cases only reported for the month. That the epidemic has attained large proportions is seen in the fact that the rate of the past six months maintained during the year would mean twelve cases for every 1000 of the population of 190,000, much greater than the worst in London during the past five years, that of 1893 being 8.6 cases per 1000.

That the outbreak should have made such headway in so short a time is very remarkable, and it is well that we examine some of the principal reasons therefor.

1st. That there had existed a population in Toronto at least up to fifteen years of age very largely unprotected by a previous attack.

2nd. That the disease was at first mild, but not as mild as the London cases. The percentage of deaths to notified cases was 4.7 in London. In Toronto it has been 5.5 per cent. for six months.

3rd. The non-reporting of mild cases in some instances early in the disease.

4th. To the non-notification of the public of infected houses by the Health Department.

5th. The reopening of infected schools within too short a period after closing.

6th. To the comparatively few instances where the infected child has been removed from its home to the isolation hospital.

7th. To the too short time during which cases and members of the household have been kept from the public and school.

8th. To the lack of any systematic method of inspection of the 500 and more farms and dairies from which the milk supplies of the people have been taken.

Referring to these in order it may be said that the existence of a large unprotected population, while an unfortunate element in this case, has been a fortunate matter as regards public health in the past fifteen years. We have had immunity so long that perhaps we had begun to think diphtheria was our only plague of children.

Re the 2nd and 3rd points, the comparatively mild type of the disease is a cause for thankfulness, but the responsibility for non-reporting of cases must rest, nevertheless, distinctly upon the householder where no physician was employed, and upon the physicians when they were employed.

Re the 4th point, the non-notification of the public by placarding houses in the light of all the facts must be looked upon as a distinct mistake, as well as a neglect of the plain terms of the Statute (see sec. 81, P.H.A.)

Precautions to be taken against spread of infection.

When the small-pox, scarlet fever, diphtheria, cholera, or any other contagious disease, dangerous to the public health, is found to exist in any municipality, the health officers or local board of health shall use all possible care to prevent the spreading of the infection or contagion, and shall give public notice of infected places by such means as, in their judgment, is most effective for the common safety. 47 V. c. 38, s. 50.

as well as of the City By-law No. 2477, page 263 Edition of Consolidated By-laws of the City of Toronto, sec. 14 of which says:—

"The medical health officer within six hours after he shall have received notice of the existence of scarlet fever, diphtheria, small-pox, cholera or whooping cough in any house shall affix or cause to be affixed by the head of the household or some other person, near the entrance of such house a card at least nine inches wide and twelve inches long stating that such disease exists in the said house and stating the penalty for the removal of such card without the permission of the medical health officer of the board."

Not only has the non-notification in the early days of the epidemic served to make the disease seem trivial in the eyes of the public, but it became the means by which many persons entered infected houses who would otherwise have been warned. More than this, it has caused supply men, as butchers, bakers, milk-men, and notably those supplying bottled milk, to become the possible means of transmitting disease to other customers while in complete ignorance of their actions. The result of this in the complete temporary paralysis of the business of one of the largest milk vendors will be referred to again.

As to the 5th point, the reopening too early of infected schools, everyone recognizes the extremely serious nature of breaking up even for a week a large public school, but it is manifest that if the closing of a school is to serve any useful purpose it should be for such a length of time as that every child living in an infected house would with the first case be kept away at least six weeks from school.

Regarding the 6th point, this question is immediately connected with the preceding. We have seen that in 1894 sixty-three per cent. of all the 11,598 notified cases in London were taken to the hospital and there detained for some six weeks, in some cases two or three months. The enormous extent of this work can hardly be understood, but as Dr. Wm. Gayton, medical superintendent North-western hospital, London, says in the Report of 1894, and as this board has said and urged, notably in the fight for the Isolation hospital in Toronto in 1892, the removal of cases to the hospital is the only effective and economic means for dealing with outbreaks of all epidemic contagious diseases, both in limiting their spread and in saving life. Not until the hospital was established in Toronto in the face of the greatest opposition was it found possible to deal with diphtheria, nor will it be possible to deal with scarlatina, if the experience for years of the health and hospital authorities of London be accepted as correct.

As regards the 7th point, the period of quarantine during convalescence, we recognize the practical impossibility of extending it to a sufficient length in the very many mild cases where patients are treated in their own homes, while the hardship of a quarantine of six weeks for all the members of a family, but especially the poor, is too great to be endured. Prompt removal of first cases, with immediate disinfection, and a week's isolation of the family are easy, scientific, and practical means of dealing with scarlatina.

As to the 8th point, the inspection of places where food, and especially milk, is prepared and sold, it must in the very nature of things be very closely followed up. It will be remembered that in the report of your committee on epidemics early in February, the existence of scarlet fever on three milk farms in Toronto township was referred to, and it was made apparent how great the danger from this source might become, since it became apparent on investigation that the rural boards of health make no pretence of inspecting dairies or of preventing milk coming into the city from such places. To aid the city health officer your secretary sent out a circular to the 500 and more dairymen, and it has, it is believed, been of some service. The fact that in March the police magistrate refused to convict a milk dealer who knowingly had been buying milk from a farm where

the disease had been for some two months seems to have been instrumental in deterring the city health department from insisting on an inspection of every farm and dairy sending milk into the city, for in a certificate to a large dairyman as to the freedom of his premises from disease, the city health officer states that this dairy farm is outside his official jurisdiction. There can, therefore, be no wonder when finding the daily number of cases increasing, and finding what seemed more than the usual number of cases in houses supplied by one of the largest dairies, the city health department should feel that there was a probability that the distribution of this milk by bottles might be contributing to the spread of the disease, and acting upon the presumption the city health department did order this milk vendor to discontinue the delivery of milk within the city. As the preparation and delivery of milk by bottles was urged by your secretary some ten years ago as a step in sanitary progress of the first importance, he has naturally desired to enquire as to how far the action of the city health officers was founded on a basis of fact. The fact that the milk, at once taken from the dairy stables, is aerated and cooled, placed in bottles tightly sealed, free from dust or contamination from soiled hands or dippers, water or ice added from unwholesome sources, as well as that the exact quantity of the milk be always delivered to each customer and that the keeping qualities of the milk are very greatly increased, have become so generally understood and accepted by all prominent dairy companies of Germany, of London, and the great cities of the United States, that bottled milk is everywhere looked upon with favour by the better classes of the public, who are quite content to pay more for the extra expense involved in its preparation. The city health officer in his last monthly report to his board has laid great stress upon the dangers due to the bottles coming from houses where infectious disease exists, and, they being contaminated, going back to the dairy and so infecting a general supply. Under the methods which have been pursued in dealing with scarlatina in Toronto during the past six months, where as in the case of this single dairy some 22,000 bottles were delivered in a single month, it well may be that some bottle coming from an infected house, unknown to the dairyman,—and where there was no means, either to the dairyman or the health officer, of knowing whether or not such a bottle had been disinfected,—may have infected the hands of the delivery-man; but to attempt to lay the blame for disseminating disease upon the milk vendor, and to be oblivious to the fact that neither of the two essential and legal conditions of protecting the public, viz.:—a removal of the patient to the Isolation hospital or the placarding of the house, has been carried out, would seem to indicate a misapprehension of the actual facts of the situation or a conviction that the public at large will accept such published statements without examination. Such a statement is, however, wholly contrary to the facts as under the practice elsewhere. For instance, in the city of Buffalo, where, if patients are not generally taken to the hospital, at least every house where the disease is reported is at once placarded, should any milk-vendor, thereafter deliver milk in bottles at such a house, he will, if discovered, at once be summoned before the magistrate and fined, or has his license rescinded. In order however, that the actual dangers arising from the distribution of milk to the extent of 22,000 bottles may be accurately estimated even under these conditions, your secretary has analysed the total cases during May and six days in June on the returns supplied by the city health office with the following results: Of the total 198 school cases reported to the city health officer during the period, 63 were reported customers of one dairy; of these 63 cases, 41 were reported as attending school, or 65 per cent. of the whole cases supplied by this dairy. Of the 41 cases 23 went to 4 schools, viz.:—Huron, Landsdowne, Model, and Queen Victoria, while 54 out of the 198 infected school children of the city during this period, or 27 per

cent. of all the school cases occcurred in the population of the schools of Lansdowne, (969); Huron, (706) Queen Victoria, (751); Model (534)); or a total school population of 2,960. Now the registered number of pupils in the city for the year excluding the model and separate schools was 26,571, or schools with slightly more than one-tenth of the pupils had 27 per cent. of all the school cases.

Of these schools, moreover, the Model school had 23 cases or 11 6 per cent. of all the cases in a school population of 26,571. A closer examination of these cases is of still more interest. From the 1st to the 31st of May, 15 of these 23 cases had occurred, and only three of them on the route of the condemned dairy. From the ages of the children so far as given they divide apparently into two classes or rooms, or in other words were exposed to two common sources of infection. I am informed by the city health officer that he has had constantly to struggle against the attempts to have children certified free from the disease by physicians, return to school. This, with perhaps some non-reported cases amply serves to explain the presence of infection in the schools.

The fact of a number of cases from the 31st of May to the 5th of June being on the route of this single dairy, which from the 26th of June had used absolutely new bottles, new brushes, and boiled every bottle after washing, along with the known incubation period of 3 to 4 days for the disease, presents much food for thought to those who have attributed the disease to bottled milk. Such other facts as that where with 13 families supplied by the same dairy in Rosedale, but 4 children—all school children in the same school—had the disease, and not another case reported in these families during the period, or that in 12 families supplied on Yonge street, outside the city not a single case occurred, ought surely tobe sufficient to make the city health department pause before doing, as the report of its officer condemning bottled milk would tend to do, irreparable injury to the one great method by which the quality and character of the milk supply of Toronto has during the past few years been so wonderfully improved.

Let the public health statutes and the city health by-law be enforced as regards either immediate removal to the Isolation hospital or placarding of premises where cases of disease are, and the people will at once be freed from at least one source of possible danger.

It is with much pleasure that your committee has learned of the notable decrease of the disease since the schools closed at the end of June. But this Board and the city health authorities have to realize that experience as regards diphtheria in Toronto, as well as that of London with regard to scarlatina, teaches that if every possible means known to health authorities be not fully taken advantage of, the city will see the epidemic expand again in September, and another winter of anxiety for thousands of homes follow. If with only an average of fifty per cent. of all cases in London and seventy per cent. in Toronto schools, the increase after the holidays in the former was sixty-four per cent., we may expect—except that our vacation is longer—a similar result almost immediately to follow in Toronto. The recent great epidemic in London extended from 1890 to 1894, and similarly, 4,500 new children born in Toronto every year, together with the large number approaching school age yet unattacked, will supply fuel to feed the flame for years to come. With these facts, and the almost stoical belief on the part of many parents, in view of the experience of the past six months, that if their children must have it they had better have it now, it will require the health authorities to strain every nerve to deal with the problem. If our mortality has been 5.5 per cent. of all cases parents must realize that the average mortality in London with a similar total percentage was 18 per cent. of all children under five.

Recommendations.—Your committee would recommend that the local board of health adopt the following steps:

1st. That it should on being notified of any case of scarlatina require the immediate removal of the case to the Isolation hospital.

2nd. That should this not be at once complied with, the household be quarantined until the six weeks from the occurrence therein of the last case shall have elapsed, and the house be placarded.

3rd. That inasmuch as your committee is informed that the Isolation hospital wards of the city set apart for scarlatina have been full during the past six months, and that they have proved wholly inadequate for the demands upon them, that the local board of health be directed to supply itself with such additional hospital accommodation as is required under the Act.

4th. That the Board be urged to extend systematic inspection to every dairy or farm sending milk into Toronto, as is the practice in other cities of the Province, the freedom to inspect such being the condition on which a permit to send milk into the city be granted.

In conclusion, your committee in notifying the city health authorities of Toronto of its recommendations desires that the Board express its anxiety and willingness to lend every assistance within its power to mitigate, and, it is hoped, finally stamp out the serious epidemic which exists at present.

IV. REPORT OF THE COMMITTEE ON EPIDEMICS.

August 16th, 1897.

Mr. Chairman and Members of the Provincial Board of Health:

GENTLEMEN,—Your committee begs to report that the general health of the province remains good, notwithstanding the fact that it has been temporarily endangered through the introduction into the province of smallpox in such a manner as to have caused reasonable alarm of an outbreak in several municipalities.

According to information, which is believed to be accurate, as obtained in evidence taken by your committee in an enquiry held at Belleville on August 3rd., 1897, under the powers contained in section 11 of the public health act. A young man employed on an emigrant ship, landed in Montreal on the 27th of July, remained there, according to his own account, while sick with an eruption of smallpox for two days, sleeping, if he is to be believed, in hotels, and on the 30th came west on a train, arriving in Belleville early in the morning of the 31st. Being sick and lacking funds, he went about 7 a.m. to the telegraph office and remained therein some two hours, awaiting permission to telegraph to Toronto, where his mother lived, for money. He was seen by the superintendent of the office to be sick and have an eruption, which caused him to be asked to leave the office. He went into the alleyway near by where several workmen and others were exposed to him, they conversing with him freely. He again entered the telegraph office about 2 p.m., where he remained a short time. No reply from Toronto having come, he again went away into the lane, remaining there till about 4 p.m., when money which had been telegraphed for arrived, was given to him in the lane, and a receipt for it signed by him. The impression of the clerk, Mr. Canniff, who made this statement is—"that the man had smallpox, and I had not been prompted to this opinion."

The evidence of the clerk further states, "That he left the lane within five minutes thereafter." These statements are corroborated by the evidence of a plumber working on a building beside the lane. This latter witness states, "I did not pay any more attention to him until Dr. Tracy (M.H.O.), came along, between four and five o'clock, and I saw the doctor examine him." Further, in evidence, this witness states, "I said to him I guess you have smallpox."

Dr. Clinton, a physician in Belleville, stated in evidence, "that between four and five o'clock on July 31st., as he was driving along Bridge street, he was asked to examine the man already referred to, and did examine him, the man being brought to the side of his buggy." He says, "I advised policeman to have him isolated, and prevent him mingling with the public, because I thought him to be a dangerous man to be at large, believing he had smallpox. Policeman Morton said he had no authority to detain him, I then advised him to report at once to the medical health officer of the board of health."

Dr. Tracy, the medical health officer, states in evidence, "about 5 p.m. Saturday, 31st July, some person spoke to me, stating that there was a man sitting by the express office and was looking sick. I went in to see him and asked if he was sick? He said he was not, but that he was waiting there for money by express from Toronto, I then examined him." . . . "I went over to see Mr. Robertson and Mr. Masson (city clerk and city solicitor) at city hall, and Mr. Masson discussed the Health Act with us. In the meantime the sanitary inspector, Morton, came in, I said to these gentlemen that I had a suspicious case

at our express office which might be smallpox, but was doubtful, and stated the case ought to be taken care of for several days to be under observation. I asked Morton where one could get a place and he suggested Rosa Thompson's house. I left to drive to Rosa Thompson's and Morton left for the express office to arrest the man and bring him down. I waited fully half an hour at Thompson's, till nearly 6 p.m., Morton not arriving, I went to hunt him up."

Morton, the sanitary inspector, states in evidence, "I went to the city clerk's office, I was not there more than five minutes. There were present the city solicitor, Mr. Robertson and Dr. Tracy. It was decided then that it was advisable to put the sick man in an isolated house, and Dr. Tracy left to look up a house. I suggested Rosa Thompson's. I went back to where this man was, and found that he had disappeared My instructions then were to bring Whitney down to the vacant house."

Mr. D. Robertson, city clerk, states in evidence, "There was a distinct understanding that he, Whitney, was to be detained, and action to be taken to that end."

All the evidence given thus makes it plain that the case was considered suspiciously like smallpox and that the isolation of Whitney was necessary in the public interest.

Sanitary Inspector Morton further states, "I left man standing on road when I left to go to the city clerk's office. As I stated, Whitney was gone when I got back from city clerk's office."

Johnston, the plumber, states in evidence, "Dr. Clinton drove away and Whitney crossed road back to gangway again and he asked me if he could get a train for Toronto? I told him he could not get one, I thought, till two or three o'clock in the morning. He asked me if a boat went up, and I said yes, about 8.30 p.m., and he said I will go and get my overcoat and go to the boat. So he left me then. I told him to go by way of Pinnacle street, as he would not meet so many people, as there were a great many gazing at him and he did not seem to like it. But he went up Front street and I lost track of him there until I was visiting Mr. Newman, a friend of mine on the Passport, and I saw the man. Whitney got on the forward gangway of boat." . . . "I spoke to him at boat, I said, I suppose you are going. He said, yes." "He came out from behind wood-piles and oil barrels. He was out of sight till boat came in. I saw chief constable on the dock, but was not speaking to him."

Johnston further states that Whitney left him to go for the overcoat. "No one went up street with him. Morton (the sanitary inspector) came to me after Whitney had gone, and said, 'I want that man.' I told Morton he had gone up Front street, and Morton went after him. It was not five minutes after man had gone that Morton asked me." Dr. Tracey, M.H.O., states regarding the events which followed:

"After driving around a considerable time, I found him (Morton) on Front street, half a mile from express office. He stated that when he got back to express office, the man had received his money and skipped, and he had since been hunting for him, and could not find any trace of him. I went through station and asked about him. There was a train leaving about five minutes to six: he had not been there. I went about city making enquiries, and went back as far as Pinnacle street, and around back to station. While passing Lott's place, Morton cried out, 'I believe that was the man on the car.' The car stopped, and man came up to buggy. I recognized him as the sick man, and I further questioned him and ordered Morton to take him along Pinnacle street. He did so,

and got him something to eat. This was about seven p.m.. I considered the order of five o'clock in force, that is, to take him down to Rosa Thompson's. I saw no more of him"

Regarding what occurred at this time, sanitary inspector Morton states in evidence: "I met Dr. Tracey and told him the man had got away. This would be half an hour after I left Mr. Robertson's office. We then drove up Front street, and Mill street, towards station looking for the man. We did not get to station but opposite Lott's factory when we saw man on car. I called him off car. There was one passenger besides." Questioned as to "what happened then?" Morton states, "Dr. Tracey asked him some questions as to pain in back and if otherwise sick; man said 'no.' About head? Had no headache. We asked where he came from? He stated he left Montreal Thursday, he and two others had beaten up on freight cars. He gave name of ship. I think he said he was sick in Montreal, but do not remember when he said his face broke out. Dr. Tracey then said he did not think his a case of smallpox. Dr. Tracey did not at any time instruct me to take man to Rosa Thompson's. To the question 'when you were left with man, was there any understanding what the man was to do?' No, the doctor then said 'let the man go and buy him some provisions.' I bought him provisions with money he gave me. The man was there waiting for me on Pinnacle street. I had not orders or instructions from the doctor to take the man down to Rosa Thompson's house, although I had had in the afternoon. I considered then my supervision of the man was at an end. I told him to get out of town as fast as he could and keep away from people."

"I did not look for him any more. I did report my final action with man to Dr. Tracey. I reported about 9.30 p.m. to Dr. Tracey that I heard that man had gone away on boat. I think doctor said, 'Toronto people would be warned.' To the question 'Did you not think it strange that Dr. Tracey should tell you to let man go and afterwards tell you that he had warned Toronto people?' I did not think anything about it at the time."

To the question, "Why did you consider it your duty to notify Dr. Tracey that man had gone on boat?" Morton stated, "I did not think it my duty, but I had heard this, that a man said that he had gone on boat, and out of curiosity I told the doctor what I had heard."

To the question, "Who gave you the information?" Morton stated, "George Johnston, the plumber."

Concerning the occurrences referred to in the evidence of Morton just quoted, Dr. Tracey, M.H.O., states:

"I saw no more of him. I failed to meet anyone who had seen him. I did not think of the steamer, as we seldom go down there. Steamer leaves about 8 p.m." To a question regarding Rosa Thompson's house, Dr. Tracey stated, "I would have taken possession of house if I had gotten the man. About nine p.m., a man whose name I did not remember, but who knew I had been hunting for Whitney, met me at corner of Quinte hotel, and stated he had seen a man with a dark overcoat go on the forward gangway of the steamer and thought he looked like the man who had been in the express yard. The man had not an overcoat when I saw him, but thinking possibly it might be the party, I telephoned Dr. Sheard in Toronto, about 9 p.m., and got him about 11 p.m. I stated to him that a suspicious case like smallpox might be on the *Passport*, and to look out for him. I could not see where else the man could be as he was not about the station, and I thought he might have got off by steamer."

In answer to a question regarding the fitting up of the Rosa Thompson's house, as to how he thought Morton would take care of the man, Dr. Tracey stated, "I presumed Morton would have got goods, bedding, etc., on my order, but gave no order for them. I was surprised when I learned Morton had allowed his man to go. I did not see Morton again till Sunday, as he left with the distinct understanding he was to take care of him."

To the question, "Did Morton ask you to discharge the man?" Dr. Tracey said, "he did not, and I did not tell him to let him go."

Such are the main facts bearing upon this most unfortunate occurrence. As to the man Whitney, there would seem to be no doubt as to his culpability, and as to the occurrences which led to his being allowed to escape from Belleville, those who read the evidence herein given, will not fail to form an opinion as to the culpable neglect, and the indifference to the public welfare, which allowed the man to escape.

That any person, who has reason to believe he is suffering from smallpox, should deliberately mingle or be allowed to mingle with the public, and still more to travel from one municipality to another, is a thing which has rarely happened, or been allowed to happen in Ontario during the past fifteen years, and your committee would recommend that the evidence bearing upon this case be transmitted to the law officers of the Crown, in order that such steps may be taken as shall best serve to prevent the repetition of such acts in the future.

Your committee has further to state that it at once, on learning of the main facts of the case, did on Sunday, August 1st, notify the medical health officer of Belleville to hunt up all exposed persons and vaccinate them, and on Monday, August 2nd, instructed the council of the city of Belleville to proclaim public vaccination and immediate vaccination of all exposed persons. This action has been taken by the council and the local board of health, and it is hoped by it the local danger may in a large measure be averted.

Your committee has further to commend the prompt action taken by Dr Sheard, the M.H.O. of Toronto, to prevent danger arising from the possible infection of the passengers of the *Passport*, owing to which action there is every reason to believe that no further cases of the disease will occur in the city.

Your committee believes that with these occurrences and with the present existence of smallpox at several places in the Dominion, the time is opportune for urging anew on all the municipalities of the Province the vaccination of all school-children, as evidence exists everywhere of a very general neglect of this absolute preventive, if not of an occasional case, at any rate of any widespread epidemic.

Your committee begs further to report that through the Secretary the town of Smith's Falls was visted on the 28th of July, both in relation to sewage disposal and the existence there of scarlatina. He met the local board of health, indicated the danger of inaction, and had action taken at once by the local board to obtain possession of a large building in the suburb as an isolation hospital.

Your secretary also visited the town of Picton, where diphtheria had been present for some months. An examination of all the returns made to the medical health officer showed direct connection of almost every case with a pre-existing case through direct contact or by visiting infected houses. Your secretary, with the medical officer, inspected various portions of the town, and approved of a large house in the suburbs as an isolation hospital, and subsequently met the local board of health and physicians of the town, and discussed the needs under the

circumstances. There was a concensus of opinion on the part both of the physicians and local board, that an isolated building to which first cases could be taken was necessary and the local board took subsequent action to have the building referred to obtained and fitted up. The prompt action has resulted in restoring public confidence in the general healthfulness of Picton.

Your secretary likewise visited Montreal in connection with the smallpox outbreak there. He was received with every courtesy by the provincial and city health authorities, and visited the smallpox hospitals in both Montreal and Westmount. The provincial authorities have been most active in their efforts to limit the spread of the disease, and as no new cases have been reported for ten days, there is every good reason to hope that, unless some new source of contagion has been introduced to the city, the outbreak there is at an end. The existence of an outbreak of chickenpox during the previous six months has been referred to locally in Montreal as a point of much interest, and, indeed, in the last family reported, although unvaccinated, the first case has been so mild as to lead the physician to diagnose chickenpox. The city authorities there have instituted a general vaccination, increased public stations, and vaccinators have been appointed. The Westmount family, the source of whose disease has been a mystery, living as they do in a residential suburb, miles away from the wharves, illustrates the danger of neglect to vaccinate. There are four children and a servant, all infected from the first boy of ten, all of whom were unvaccinated. Delay in diagnosis had enabled them to be inoculated with smallpox the new vaccination running concurrently. The family had moved from Ontario, where we are supposed to have the child, or school, population, very generally vaccinated.

Submitting the report with the several matters contained in it for your consideration, your committee have the honor to be,

P. H. BRYCE,
J. J. CASSIDY.

REPORT OF THE COMMITTEE ON EPIDEMICS, ON RABIES.

TORONTO, August 17th, 1898.

To the Chairman and Members of the Provincial Board of Health:

GENTLEMEN,—Your committee, as instructed at the last meeting of the Board, begs to report that it has considered the practical question of dealing with hydrophobia in Ontario. In the report submitted to the Board by Mr. J. J. Mackenzie at the last meeting, the history of the appearance of rabies in Ontario during the last seven years was set forth at some length.

The report states

"In view of this fact, and in view of the persistent appearance of the disease from time to time, entailing always considerable expense to municipalities, I have thought it well to bring before you all the facts at our disposal in regard to the occurrence of the disease in Ontario.

The first outbreak of which we have any official knowledge took place in the county of Middlesex in May, 1890.

On May 12th, 1890, the local board of health of London, Ontario, communicated with your board with regard to the prevalence of a disease in the dogs of the city and district which resembled rabies.

On May 20th of the same year the health officer at Dorchester station, Dr. Graham, advised your Board that a man had been bitten by an apparently rabid dog. This man was the first one from Ontario who was treated by the Pasteur method. An investigation into this outbreak was made in the laboratory by the inoculation of animals, but the results were not satisfactory. The fact, however, that several domestic animals which had been bitten by this dog developed typical hydrophobia in about three weeks' time, pointed conclusively to the character of the disease.

In 1892, 1893 and 1894 only one outbreak was brought to the attention of your Board, which possibly occurred in 1894, because I find that there is a record in the books of the Pasteur Institute, New York, of a patient from Ontario being treated there during that year.

In 1895 a second outbreak took place in the county of Middlesex, this time in Ekfrid township. A report upon this outbreak is contained in the Annual Report for that year, page 43. This case is interesting, as being the first occasion upon which it was conclusively proved that the disease was rabies; this was done by animal inoculations, a full account of which is contained in the report cited. During this outbreak one man was bitten and was sent to New York for treatment. He remained well under treatment and has not since developed the disease.

During the summer of the same year the head of a sheep was sent to the laboratory from Paris, Ontario, the animal having died of suspected rabies. The material was, however, in such an advanced state of decomposition that nothing could be done to settle the question, but subsequent enquiries revealed the fact that at this time some twenty sheep in a pen were bitten by a stray dog reputed to be mad, and that all developed symptoms of the disease and were killed in from fourteen to twenty-four days after, the usual incubation period of street rabies.

In addition to these two outbreaks in 1895 it is possible that two others occurred, although the facts were not brought to the knowledge of the Board, because we find a record of two persons from Ontario being treated for the disease in New York, in addition to the man from Ekfrid township.

In 1896 a second outbreak occurred in Paris, this time in the town itself, and three persons were bitten and sent to New York for treatment. The inoculations of rabbits with the medulla of the dog in this case produced rabies in three animals, proving conclusively the character of the disease. A dog whose remains were received from Paris about the end of 1896, was proved also to have had rabies. The material derived from this outbreak was used for a continued series of investigations into the pathology of rabies which has been carried on in the laboratory during the winter.

On Tuesday, June 1st, 1897, word was sent to the Board by Dr. J. W. Smith, Dundas, that a child had died in Dundas with symptoms, and under circumstances which pointed to rabies. The cerebellum, medulla and portions of the cord were sent to the laboratory, and not only microscopic study made, but also inoculation of rabbits. The microscopic examination showed that there had occurred capillary hæmorrhage at various points in the nerve tissue, and that here and there the capillary walls were much thickened by a proliferation of the endothelium and an infiltration by leucocytes. Also the nerve cells of the motor areas of the cord and medulla showed a characteristic parenchymatous degeneration similar to what one finds in rabies. Two animals were inoculated with material from the

medulla of this child, one developed paralytic rabies in fourteen days, the second in twenty-one days. A microscopic study of the cord of one of these animals revealed the same pathological changes enumerated above.

There is consequently no doubt whatever, but that this child died of rabies, and we have unfortunately to record the first established death from this disease in the Province.

Since then, June 28th, the head of another dog has been sent to the Laboratory, suspected to have had rabies. The material was too much decomposed for microscopic examination, but three animals were inoculated, and up to the present time, twenty-one days after, they are alive and well. It is not possible yet to decide, as I have known the incubation period to extend over thirty days, and it is reported sometimes even longer than that.

This same year an outbreak occurred in London, Ontario, for the details of which I am indebted to Dr. Campbell, of the Local Board of Health, the facts as to this outbreak are as follows: We have thus the occurrence of some eight or nine outbreaks of this disease during the past six years. The death of one individual and the really serious expense of the treatment of some ten or twelve more, make it most important that your Board should take some definite steps in regard to the matter of prevention, with the possibility being strong of renewed occurrences of the disease in coming years, with these facts before it and the history of many outbreaks in foreign countries, some of which are referred to in the following paragraph.

"There can be no doubt, in spite of occasional failures, such as these, that the preventive treatment of Pasteur of persons bitten by rabid dogs is of the greatest value. This discovery should always be remembered as inaugurating a new departure in the treatment of zymotic diseases, and as a demonstration of an effective means by which thousands of human beings may be saved from suffering and an awful death.

In 1888 the number of persons bitten by dogs proved to be rabid, and who were inoculated at Paris, was 1,371. Among these the total mortality including those who came late and died during treatment, was 1.31 per cent. The mortality among all persons inoculated was 1.16 per cent. Up to 1891 the rate had been reduced below one per cent. Among these cases there were 280 cases of face-bites. Among persons bitten in the face and not inoculated, the mortality is 80 per cent., and among all persons bitten and not inoculated, the mortality is 15 per cent.

Antirabic institutes are now in operation in many countries. At Warsaw, in 1889, 146 patients were inoculated, and one died. At St. Petersburg, among 484 patients inoculated, the mortality was 2.68 per cent. At Odessa, when the simple method was used, 3.39; in 1887, with the intensive method, among 345 persons, 0.58 per cent.; in 1888, among 364 persons, 0.64 per cent; at Moscow, in 1887, 1.27 per cent, and at Turin, 1.88 per cent. At Constantinople, there were 34 persons up to November, 1888, with mortality nil: at Havana, 0.60, and at Bucharest, 244 persons, mortality nil. Thirty-nine persons bitten by the same animals refused treatment; of these four at least died of the disease. In Hungary, in nearly three years, 552 were bitten; 62 were inoculated and not one died; 470 were not inoculated, and at least 44 died. In Italy, by Singi de Blasi, 343 were inoculated, mortality 1.17; by Celli, 109, mortality nil; and by Baratier, 335, mortality, 0.59. At the New York Pasteur Institute, 686 persons were inoculated in five years up to January 1st, 1897, with mortality 0.58. Several of these patients were from Canada. The mortality among Canadian patients was nil.

Rabies which used to be very common in Berlin, has been completely stamped out by a law extending to the whole of Prussia, which provides that all dogs suspected of rabies shall be immediately killed, also all animals which have been bitten by rabid animals, and that all dogs in a district which has been infected by an outbreak of rabies shall be confined, or, when abroad both muzzled and led. No case had occurred in Berlin from 1883-1891. In Vienna rabies was entirely put an end to by rigid muzzling, but in 1886 the order was rescinded, and within a year the disease reappeared. Thereupon the muzzling order was put in force again, and is still maintained, (1891) so that the disease has vanished. In Sweden rabies was common, and from eight to ten persons died annually of hydrophobia. After the enforcement of muzzling and the prevention of importation of dogs, rabies declined, and no death from hydrophobia has occurred since 1870. The community of Mauritius has a similar history.

In England the mortality from rabies rapidly increased during thirty years up to 1891. The mortality during that period reached the high total of 939.

In the opinion of Professor Fleming, who read a paper on the propagation and prevention of rabies at the International Congress of Hygiene, in London 1891, the "United Kingdom can quickly and easily free itself from the disease, and keep itself free if it cares to do so; and a heavy responsibility for the loss of human life rests upon those who oppose, or do not choose to adopt, the measures indicated. Continental nations with coterminous frontiers should combine in a simultaneous effort to abolish a scourge, which causes so much suffering to man and beast. Such a consummation can be realized; it only needs the will to effect it."

In Professor Fleming's opinion, the suppressive sanitary public measures are in the order of their importance:

1. Destruction of all dogs which are rabid, or which are suspected of being of becoming rabid;

2. The seizure, and if need be, destruction of all ownerless and wandering dogs;

3. All other dogs to wear a properly constructed and wire muzzle, while rabies prevails, and also for a period equal to the longest interval of latency after the malady has been suppressed.

Utilizing the experience of other countries, your committee would suggest the adoption of regulations to be approved of by an Order-in-Council, if thought expedient, under section 13, cap. 205, R.S.O., 1897:

The following clauses for such regulations are submitted for your consideration:

1. Whenever any person has in his possession, or knows of, a rabid dog, or one which he suspects of being rabid, he shall notify the Local Board of Health or any officer thereof, or any constable or police officer of the fact, as of any other comunicable disease.

2. The Local Board of any municipality, or any officer thereof, when informed of the existence of a rabid dog, or one suspected of being rabid, shall at once order the destruction of any rabid dog, and the isolation of any dog suspected of being rabid, by the owner on his own premises, or where this is not possible, then in such other manner as will protect the public until the suspicions of the Board shall have been verified or disproved.

3. Whenever any Local Board has a rabid dog, or one suspected of being rabid, within its municipality, it shall notify the Provincial Board of the fact, in order that steps may be taken to determine the character of the

4. Every dog shall be deemed to have been exposed to the infection of rabies which has been in the same shed, stable, building, kennel, field or other place, or otherwise in contact with any diseased or suspected dog, or which has in any other way been exposed to the infection of rabies, and shall be dealt with as in the case of a suspected animal.

5. No person shall remove any animal isolated by the local board of health of any municipality as being rabid or suspected of rabies, without an order previously signed by the secretary of the local board of health in the municipality, and with the consent of the medical health officer, where such officer exists: or if none, then the secretary of the Provincial Board of Health.

6. The local board of health shall cause all stray dogs within their municipality to be seized and dealt with as a suspected animal during the three days following such seizure. In case the dog is not claimed within this period, the dog shall be treated either as rabid, and may be destroyed, or be treated as suspected of rabies at the option of the said local board of health or the medical health officer.

7. The carcase of any animal slaughtered under these regulations, shall be burned, or buried to the depth of not less than four feet and well covered with quick-lime.

8. The local board of health shall cause the disinfection of any building or other place where a rabid or suspected dog has been isolated by thoroughly washing the same with a solution of fresh milk of lime.

9. The local board of health, or any of its officers, shall have full and free access to any premises or buildings for the purposes of these regulations.

10. In every city, town and village, and in every township in Ontario, where an annual dog tax is levied, the owner of every dog shall be required to affix to a collar about his neck a metal tag supplied by the municipality, giving evidence of proper ownership.

11. On the appearance, or threatened appearance, of rabies, in any part of Ontario, the Provincial Board of Health may, with the consent of the Lieutenant-Governor-in-Council, issue a muzzling order under which the local boards of health of all the municipalities included within the district, whose extent and limits shall be defined in the order, shall require the muzzling of all dogs within their respective municipalities for such period as is set forth in the order.

12. The Provincial Board of Health may, whenever informed of the existence or supposed existence of a rabid dog within any municipality, take such steps as it may deem necessary in order to prove the existence of the disease, and may take, or cause to be taken, any action required under these regulations, or any other Public Health Act, to be taken by local board of health in case such local board has neglected or refused to take such action. (See sec 11, R.S.O.)

13. Whenever any person has been bitten by a rabid dog, or one supposed to be rabid, the local board of health of the municipality, wherein such person is, shall at once take such steps as will best serve to protect said person from the fatal effects of the bite. The same shall be done at the expense of the person himself, or of those responsible for his maintenance, and if not, then at the cost of the municipality wherein such person has residence. See sec. 84, R.S.O., 205.

14. With the consent of the person or his parent or guardian, the person bitten may be treated by the Pasteur, antirabic treatment for immunization against rabies, at such Pasteur Institute as may be under the control of the Provincial Board of Health, or such other as may be approved of by it.

The necessity for the adoption of prompt and effective action in the case of persons bitten by rabid dogs, in order to insure immunity against the disease, has been again and again set forth by all authorities on this subject. Without referring to the methods of immediate cauterization or removal by the knife of the injured tissue, which to be effective must be within fifteen minutes or less, after the bite, universal opinion goes to show that we can alone depend upon the Pasteur treatment for safety. The time lost in considering the question of sending patients to New York, as has been done, is productive of real danger to the person bitten while the expense of treatment has in some instances proved a barrier to action being taken by local boards, even when a life was at stake. Under such circumstances your committee deems it proper that your Board urge upon the Government that facilities be supplied whereby at a low cost to the individual or the municipality prompt treatment may be carried out in Ontario. If the cost of treatment of the persons already bitten during 1897 in Ontario be alone considered, it means that an expenditure of some $300 or more must have been incurred for every patient sent to New York, or a total sum of not less than $3,000 has been required to protect these persons against possible death from the most terrible of diseases. Not only, however, will the extension of the laboratory facilities of the Board supply the Province with this means of saving life, but the many other directions in which the Pasteur Institutes of other countries have developed experimental work in state medicine would similarly be followed out here.

Although it is true that the Provincial Board of Health since it instituted its laboratory work in 1890 has done something in directing and aiding local boards in the more accurate and scientific part of their work, yet it is plain that with small laboratory facilities and the services of but one person, as bacteriologist and chemist, the merest fringe of the work being done in many other countries, States and Provinces, is being touched.

In view of the facts which have been herein set forth, your committee would recommend in conclusion that the Board urge such action as will serve to extend its usefulness in the several directions which the public health interests of the Province demand.

All of which is respectfully submitted.

P. H. BRYCE,
J. J. CASSIDY,
J. D. MACDONALD.

NOTES.

REPORT UPON A SUSPECTED CASE OF RABIES IN A CHILD IN DUNDAS, ONT.

On Tuesday, June 1st, Dr. J. W. Smith sent to this laboratory the cerebellum and medulla of a boy, Jas. Mackenzie, aged ten years, who had died May 31st with symptoms pointing to rabies. The clinical history of the case, as well as the condition of the dog which bit the child is appended.

On the arrival of the specimen, which was in first class condition, portions of it were hardened for microscopic examination and a portion of the medulla was triturated with sterile beef broth and used for infecting animals.

Two rabbits were inoculated in the anterior chamber of the left eye. Rabbit No. 1 developed symptoms of paralytic rabies, Monday, June 14th, and died Tuesday, June 15th. Incubation period thirteen days. Rabbit No. 2 developed symptoms of paralytic rabies on Friday, June 18th, and was killed in order to preserve material for microscopic examination and further inoculations; incubation period seventeen days.

A gross examination of the medulla of the boy showed hyperaemia in the region of the floor of the ventricle and small haemorrhages.

A microscopic examination showed inflammatory thickening of the smaller blood vessels and capillaries; capillary hæmorrhages especially in the floor of the ventricle; parenchymatous degeneration of the nerve cells with marked pigmentation in some cells and a marked increase in the neuroglia elements in some localities.

All these results show conclusively that the case was one of rabies.

(Signed) JOHN J MACKENZIE.
Bacteriologist to the Provincial Board of Health

FOURTH QUARTERLY REPORT OF THE COMMITTEE ON EPIDEMICS.

TORONTO, Nov. 11, 1897.

To the Chairman and Members of the Provincial Board of Health.

GENTLEMEN,—The health of the Province during the last quarter has been marked, as that of the previous quarter, by a relative freedom from serious outbreaks of contagious disease. The smallpox cases imported into Toronto in the beginning of August resulted in no extension of the disease, and no cases resulting from exposure to these persons occurred either in Belleville or elsewhere.

Scarlatina, which became quiescent during the summer months, is making its appearance again in localized outbreaks, the mortality for the quarter as reported being .02 per 1,000 calculated on a per annum basis.

Diphtheria as usual with the autumn has appeared in a considerable number of municipalities, but it is gratifying to know that municipal boards of health and their officers are showing great promptness in limiting its spread. The small mortality is seen in the following table.

Average deaths from diphtheria for the months of August, September and October, 1897:

Cities	25
Towns	23
Townships	42
Total	90

Some of the localities with which correspondence has been had regarding its prevalence are Port Stanley, Picton, Douglas, Berlin, Essex Town, Fort William, Cambridge Township, Waterloo Township.

With regard to the methods for dealing promptly and effectively with the disease, the reports from the able chairman of the Berlin local board are of so much public interest and importance that a more extended reference to them may be made. As the correspondence shows, the local board had been uneasy at the continued cropping up of cases during the spring and summer months, without fortunately any great mortality. Your secretary was requested to visit Berlin early in September, and the situation was completely reviewed. Acting on his suggestions, the local board has since inaugurated a systematic method of dealing with the outbreak.

The details are briefly as follows:

1st. The sanitary inspectors and truant officer are required to visit every school (some ten) in the town every morning and obtain from the teachers the names of all absentees. Their homes are visited at once, and if there is any suspicion of sore throat the family are instructed to call in the family physician.

2nd. The list of suspicious cases is returned to the medical health officer at noon. The physician's report reaches him by the afternoon, and where none has been, he visits the suspected cases in person.

3rd. Where any suspicion of diphtheria exists, a swab is taken from the throat and forwarded to the laboratory of the Provincial Board of Health for examination. Quarantine of the suspected case is maintained till the results are telegraphed.

4th. Where diphtheria is shown to exist, the house and its inmates are strictly quarantined and placarded; no hospital being yet established.

5th. An isolation hospital of a permanent character is now being arranged for by Berlin and Waterloo jointly.

6th. All inmates of suspicious houses are of course kept from school.

7th. After the membrane has disappeared from the throat, a week's delay takes place, when swabs are again sent to prove freedom from the disease.

Mr. Mackenzie's report given as a part of this report, precisely states the results of this interesting series of examinations.

8th. When the examination proves freedom from the disease, the house is thoroughly disinfected by the new formaldehyde generator, and it is with extreme satisfaction that the chairman's report states, that not a single case has been traced to a house where the throat has been shown free from the disease, and has been thus fumigated.

To understand that the disease has become distributed in various centres of the town, it may be mentioned that what seemed a light outbreak, caused four deaths in October. That the length of time of infectiousness in some cases is lengthened, is shown not alone from these cases, but from an instance reported from Picton, where after four weeks' detention in the hospital, a child returned home and communicated the disease. Until this point becomes generally understood by parents and practitioners, we cannot expect either diphtheria or scarlatina to be stamped out, since we learn that scarlatina patients are not infrequently allowed abroad much under the minimum English period of five weeks isolation.

Typhoid fever has been reported as prevalent from but few districts. Doubtless the high ground water of the summer accounts for this in country places, but the fact of there being a number of reports from the several districts, and from towns and villages without public water supplies, again brings into prominence the dangers which are associated with wells exposed to animal pollutions, whether from privy vaults or barnyards. The monthly increasing number of specimens of blood from patients suffering from fever, sent to the laboratory for examination, again draws this Board's attention to the propriety of dealing with the p oblem of extended laboratory facilities.

The *Monthly Returns* continue to record the melancholy high death list from tuberculosis compared with other communicable diseases.

Your Secretary deems the subject of such overshadowing importance as to demand its treatment in a special paper, parts of which have been already made public.

All of which is respectfully submitted.

(Signed,) P. H. BRYCE,
Chairman.

REPORT OF THE COMMITTEE ON CONTAGIOUS DISEASES.

January 27th, 1898.

To the Chairman and Members of the Provincial Board of Health:

GENTLEMEN:—Your Committee begs leave to report that during the past quarter the Province has not suffered from the ravages of any serious outbreak of contagious disease.

Small-pox cases have in two instances been reported, one from Cambridge Township, in Russell County, and another near Callendar, in the Nipissing District. Investigation, however, has led to the conclusion that in both instances the cases were probably severe chicken-pox as no extension of the disease has occurred. There has been a remarkable immunity in Canada from this disease for a number of years past. Localized outbreaks are, however, reported from neighboring States during the past quarter, though none of serious extent.

Scarlatina is reported from several municipalities, but the deaths reported have been few. The following are the localities where deaths from the disease have appeared: Toronto 1, McNabb Township 1, Vienna Village 1, Yarmouth 1, Reach 1. Total, 5 deaths to the end of December.

Diphtheria has as usual during the winter season been reported from many municipalities. It has generally seemed to have had many mild cases as complaints have again and again been made that local boards and even medical health officers have assumed that the disease, which has evidently been very contagious in some instances, is nothing more than tonsillitis. The extension of the advantages taken of the laboratory of the Board in cases of this sort for the purposes of diagnosis, and later on for determining the freedom from the disease is very marked. Swabs have been forwarded from 39 different physicians from 27 different municipalities, exclusive of Berlin.

The report on cases examined continued from the last quarterly report will be given in the report of Mr. Mackenzie.

It is gratifying to learn from every part of the Province that physicians even in rural districts are increasingly making use of anti-toxine in outbreaks of the disease and that its curative effects seem now generally conceded. It is also satisfactory to note that a recent very complete testing of a bottle of the serum sold over the counter to a general practitioner in Toronto has proved that manufacturers are placing serums on the market of a high potency, and that the anti-toxine units are fully equal to the advertised strength. With a curative dose at the very moderate prices which commercial anti-toxine of assured potency can be had, there ought no longer to be any hesitation in its being promptly taken advantage of by the general practitioner or by local boards of health, even in the families of the poor where it may have to be supplied at the public expense. In the eyes of many experienced practitioners neglect to use anti-toxine can no longer be considered good medical practice.

Such figures as the following from recent Annual Reports give force to this view.

In the report of the State Board of Health of Massachusetts, to the end of May, 1897, a very full report is given of the manufacture of anti-toxine by the Board and the results of its use. The report states that the standard maintained by Dr. Theobold Smith under whom it is prepared at the Bussy Institute was 100 units per c.c. The anti-toxine sent out in 1896 doubled that sent out by

the Board in 1895. Some 3,245 bottles were sent out in 1896 or 35,000 c.c. of serum of 100 units strength. Of 189 cases fully reported to the Board which by culture had produced true diphtheria there were 22 deaths or 11.6 per cent.

Ages.	Cases.	Deaths.	Per cent. (fatally)
0—2	17	3	17.6
2—5	63	9	14.3
5—10	47	7	14.9
Over 10	60	3	5.0
Unknown	2	0	0.0

Day used.	Cases.	Deaths.	Per cent. (fatally)
1st	22	0	0
2nd	42	4	9.5
3rd	36	3	8.3
4th	22	5	22.7
5th	6	0	0
6th	7	1	14.3
7th	4	1	25.0
8th	6	1	16.0

Of 39 cases treated in hospitals there were 2 deaths or 5.1 per cent., private practice 150 cases 13.3 per cent. The report remarks what is observed here constantly in practice that the general run of cases treated with anti-toxine especially of those sent to hospitals are those in which the severe cases are notably greater than the average cases reported for the community as a whole. Of 136 cases injected within 24 hours there were but two deaths or 1.5 per cent.

Comparison of Mortality.

	Prior to introduction of anti-toxine.		Since introduction of anti-toxine, 1895-6-7.	
	Cases.	Per cent.	Cases.	Per cent.
German hospitals, (1883-1894)	157,724	26.7	9,581	15.5
Massachusetts hospitals, (1891-94)	13,332	28.3	989	11.8

Chicago statistics.

	Total.	Recovered.	Died.	Death rate per cent.
1st day of disease	106	106	0	0.00
2nd "	336	331	5	1.19
3rd "	660	642	18	2.72
4th "	269	231	38	14.12
Later than 4th day	97	64	33	34.02
Total	14.68	1,374	94	6.40

Percentage of recoveries in 1,468 cases of true diphtheria treated with anti-toxine 93 per cent.

New York statistics.

The use of anti-toxine has been greatly increased during 1896, there being 87 druggists distributing it by sale and free distribution.

Mortality of cases treated in New York treated by New York Health Department Jan 1st, 1895, to Oct. 1st, 1896 (page 315).

Total	1,252
(Mo ibund or dying within 24 hours)	80
Died	198
Mortality of bal	10.00

From these statistics we have an illustration of one of the many directions in which investigation of biological problems is advancing the public health of all progressive countries. How far this Board is to take a part in this great work must depend on the extent to which its facilities for routine work and investigation can be extended. That your Board should urge forward this work is illustrated by the amount of work which is shown to have been done in the Report of Mr. J. J. Mackenzie appended to this Report.

All of which is respectfully submitted.

(Signed) J. D. MacDonald,
J. J. Cassidy,
P. H. Bryce.

List of municipalities which have sent suspected diphtheria swabs during the year: Bondhead, Beaton, Berlin, Baden, Bloomfield, Brantford, Barrie, Baysville, Casselman, Claude, Carleton Place, Dunnville, Essex, Eglington, Goderich, Guelph, Grand Valley, Kingsville, Lindsay, Mt. Forest, Minden, New Germany, Ottawa, Port Stanley, Port Elgin, Port Rowan, Parry Sound, Picton, Port Colborne, Rodney, Renfrew, Ridgeway, Richmond Hill, St. Thomas, Simcoe, Sebringville, Wallaceburg.

LABORATORY REPORT ON STRENGTH OF DIPHTHERIA ANTI-TOXIN.

By J. J. Mackenzie, B.A.

January 28, 1898.

To the Chairman and Members of the Provincial Board of Health:

Gentlemen,—I beg to report upon the result of a test which has been made during the past month upon Messrs. Parke Davis & Company's diphtheria anti-toxin. This firm has repeatedly requested that such a test should be made, but routine work in the laboratory has been so great that it has been impossible to get time until recently for its completion.

The sample tested was bought in the open market at a drug store, and the test applied was one to determine if the sample contained the number of anti-toxic units indicated by the label.

The label claimed that the bottle contained 1,000 units; the result of the test showed that it contained over 1,200 and under 1,500 units, probably nearer 1,500 than 1,200 units. This shows that the anti-toxin was reliable, as it is necessary to place in the bottle a good margin of units in excess of the label strength, so that the loss of units which takes place by keeping may not be so great as to bring it in a reasonable time below the amount indicated by the label.

Anti-toxins differ from other drugs in this respect that there is no danger from over dosing; the danger is rather the other way, and the rate of decrease in strength due to keeping is determined by factors which are largely not controlled by the manufacturer. I propose as soon as I can get a sufficient number of animals to carry out similar tests for other anti-toxins exposed for sale, and I have no reason to expect from the reliable character of the makers that they will not give good results; but this brings up the whole question as to the action of the Board in regard to the sale of anti-toxin in Ontario.

The testing of anti-toxin cannot be done without special apparatus and special training, and it is exceedingly important that some body such as your Board should be able to supervise and control the material for sale in the market, so that physicians should be able to feel certain of the strength of the anti-toxin which they use. As yet it is doubtful if there is any danger of weak anti-toxin being sent out by the manufacturers, but there is a danger of anti-toxin being kept too long in stock and consequently deteriorating. To avoid this, the makers of anti-toxins in America warn purchasers not to use old stock, and the date of testing is placed on the packages. They also offer to exchange old stock for fresh material, so that there is no excuse for a druggist selling material which has been kept too long. In Germany all anti-toxins as a matter of fact must be tested at the imperial test station before they are offered for sale, and this necessitates a test of one bottle from each lot obtained from a house. Such a test could not be made by us in Ontario, but a sufficient control could be kept of the supply by testing occasional samples bought in the open market, and publishing the results.

There is no doubt that the manufacturers would invite such a test, and it is possible that with the tests published there would not be any need of special regulations, at least at present. But if regulations were required, it would not be difficult to draw up some which would require the anti-toxin to be somewhat in excess of the label strength, as is required in Germany, and prohibit the sale of anti-toxin after a certain period had elapsed from the date of manufacture.

The undertaking of such control tests would be a serious addition to the work of the Board, and the only question which arises is the possibility of my being able to undertake it with the steady stream of routine work of the laboratory. To give you some idea of the work necessary to the test it will be perhaps as well to outline to you the methods which are adopted.

An anti-toxic unit is ten times the amount of anti-toxic serum which is necessary to mix with ten times the minimum fatal dose of diphtheria toxin, so that when this mixture is injected into a guinea-pig of 250 to 300 grammes weight the animal shows no evidence of poisoning from the toxin. In testing anti-toxin, the first step is to obtain a strong diphtheria toxin, and this is done by cultivating a virulent diphtheria bacillus in beef broth for a certain length of time and then filtering out the bacteria. The next step is to determine the strength of the toxin. This can only be done by direct inoculation of animals, and for this purpose guinea-pigs weighing 250 to 300 grammes are used as a standard. It usually takes a dozen animals at least to determine the minimum fatal dose, and it may take more. By the minimum fatal dose we have been in the habit of taking that dose of toxin which will kill animals of the standard weight in forty-six hours. Recently professor Ehrlich has shown that this is somewhat uncertain, and at the Berlin station they now take the dose which will kill in four to five days.

This M.F.D. determined, the next step in the process is to determine the amount of anti-toxin which will neutralize the action of ten times the M.F.D. This is done by mixing ten times the M F.D. with varying doses of anti-toxin, and injecting the mixture into the guinea-pigs as near the standard weight as possible. For instance :—

Guinea pig, 300 grammes, 10 M.F.D. x 0.0005 c.c. anti-toxin, no change.
Guinea pig, 300 grammes, 10 M.F.D. x 0.0004 c.c. anti-toxin = œdema (swelling) at point of inoculation.

In such a test 0.0004 c.c. would not be sufficient, whilst 0.0005 would be sufficient. From this we would calculate that an anti-toxic unit of this serum would be 0.0005 c. c., *i.e.*, 1-200 of a c c, of the serum, which means that one c. c. would contain 200 anti-toxin units. Such a test requires, as you can see, quite a number of animals, because individual differences occur which have to be eliminated. It is a question whether, in reporting the results of such a test, it would be well to report the exact result, or to simply say that the test showed the sample to contain, say, over 1,000 units.

In Germany, of course, no report is made public, but the Imperial seal is not used unless it is sufficiently strong, and consequently it cannot be sold. But here it might be necessary to encourage the putting up of anti-toxin of a sufficient strength by publishing the exact strength of the test.

It must be remembered, however, that when we speak of exact results, we do not mean exact in the sense of a chemical test ; the test is not a chemical one, but a bacteriological one, and consequently is influenced by biological factors, such as the condition of nutrition of the animals, the surroundings so far as light, air and drainage are concerned, and other factors, such as the degree of inbreeding, etc., and in justice to the manufacturer it would not be fair to require that a test made in Toronto should be exactly compared with the results of a test made at the place of manufacture.

Looking to all these questions which I have brought forward, I leave the matter with you for discussion.

REPORT OF SPECIAL COMMITTEE ON TRANSPORTATION OF THE DEAD.

January 27th, 1898.

Mr. Chairman and Members of the Provincial Board of Health :

GENTLEMEN: Your committee appointed at the last meeting of the Board, to deal with the question of the "Transportation of the Dead," begs leave to report that it has carefully enquired into the possibility of having action taken along the lines of the resolutions which were adopted at a conference held at Cleveland on June 9th, 1897, between the representatives of State Boards of Health, the Associationof General Baggage Agents of the Railways, and of the Association of Undertakers and Embalmers.

After a full discussion of the difficulties now existing in the transportation of bodies dead of contagious diseases, owing to the different regulations existing in different states, and the desirability and practicability of the preparation of the bodies of such dead for transportation without danger to the public; a series of proposed regulations were unanimously adopted, which were referred to the several associations for approval or modification.

These regulations have been successively approved, almost without modification, by the International Conference of State and Provincial Boards of Health, held in Nashville on August 17th, 1897; by the American Public Health Association, which met in Philadelphia on October 26th, 1897; by the American Association of Baggage Agents, at the annual meeting in Denver, October 13th 1897, and by the American and Canadian Undertakers' Associations, at their annual meetings.

The proposed regulations are those contained on the next page:

The points which are of special interest to this Board are those contained in Rules 2 and 3.

It will appear that the two diseases, diphtheria and scarlet fever, are placed in Rule 2 as diseases which after preparation in the manner set forth in the regulations, may be transported by train, instead of, as now in Ontario, requiring to be buried in a cemetery of the municipality where the death occurred.

In the report of the Cleveland conference herewith submitted, the various points are fully taken up and the views of your Secretary, who attended the conference, are given in full. From the discussion it is apparent that all were agreed that if any practical method could be devised whereby local boards of health and medical health officers could be assured that a body had been prepared by a thoroughly competent undertaker, there seemed no good reason why the wishes of the friends should not be complied with by having the corpse transported to the family burying-ground, in cases where the person had died away from home. It was pointed out by your Secretary, that in Ontario there is no law recognizing the existence of undertakers or embalmers as a body, and that in the absence of such, he was quite sure that this Board would not discuss the question, at present closed, of allowing the bodies of persons dead of diphtheria, for instance, to be prepared for transportation by any legally irresponsible person. In some places, as for instance Chicago, the local health authorities do recognize embalmers as a class, who under regulations are allowed to prepare bodies for transportation. The discussion of what was desirable or possible in different states, towards giving legal recognition to such bodies, made it apparent that all action must be relegated to the several state and provincial legislatures and boards of health individually. In view of the regulations of this Board being Orders-in-Council, it would seem possible for this Board, if it deems a change of the present regulations desirable, to adopt such modifications of the present regulations as the new conditions seem to demand, and to forward the same to the Government for approval. Your committee, acting upon the suggestions made at the last quarterly meeting of this Board, has endeavored to formulate the views then expressed, in the following clauses:

Regulations of the Provincial Board of Health of Ontario, for the Transportation of the Dead (subject to approval).

Rule 1.—The transportation of bodies dead of smallpox, Asiatic cholera, yellow fever, typhus fever or bubonic plague, is absolutely forbidden.

Rule 2.—The bodies of those who have died of diphtheria (membranous croup), scarlet fever (scarlatina, scarlet rash), glanders, anthrax, or leprosy, shall not be accepted for transportation unless prepared for shipment by being thoroughly disinfected by (*a*) arterial and cavity injection with an approved disinfectant fluid, (*b*) disinfecting and stopping of all orifices with absorbent cotton, and (*c*) washing the body with the disinfectant, all of which must be done by persons approved of by the Provincial Board of Health. After being disinfected as above, such

a body shall be enveloped in a layer of cotton not less than one inch thick, completely wrapped in a sheet and bandaged and encased in an air-tight zinc, tin, copper or lead lined coffin, or iron casket, all joints and seams hermetically soldered, and all enclosed in a strong tight wooden box. Or, the body being prepared for shipment by disinfecting and wrapping as above, may be placed in a strong coffin or casket, and said coffin or casket encased in an air-tight zinc, copper or tin case, all joints and seams hermetically soldered and all enclosed in a strong outside wooden box.

Rule 3.—The bodies of those dead of typhoid fever, puerperal fever, erysiplas, tuberculosis and measles, or other dangerous and communicable diseases, other than those specified in Rules 1 and 2 may be received for transportation when prepared for shipment by filling cavities with an approved disinfectant, washing the exterior of the body with the same, stopping all orifices with absorbent cotton, and enveloping the entire body with a layer of cotton not less than one inch thick, and all wrapped in a sheet and bandaged and encased in an air tight coffin or casket, provided, that this shall apply only to bodies which can reach their destination within forty-eight hours from time of death. In all other cases such bodies shall be preparad for transportation in conformity with Rule 2. But when the body has been prepared for shipment by being thoroughly disinfected by a person approved by the Provincial Board of Health as in Rule 2, the air-tight sealing may be dispensed with.

Rule 4.—The bodies of those dead of diseases that are not contagious, infectious or communicable, may be received for transportation when encased in a sound coffin or casket and enclosed in a strong outside wooden box; provided they reach their destination within thirty hours from time of death. If the body cannot reach its destination within thirty hours from time of death, it must be prepared for shipment by filling cavities with an approved disinfectant, washing the exterior of the body with the same, stopping all orifices with absorbent cotton and enveloping the entire body with a layer of cotton not less than one inch thick, and all wrapped in a sheet and bandaged, and encased in an air tight coffin or casket. But when the body has been prepared for shipment by being thoroughly disinfected by a person approved of by the Provincial Board of Health, the air-tight sealing may be dispensed with.

Rule 5.—In cases of contagious, infectious or communicable diseases, the body must not be accompanied by persons or articles which have been exposed to the infection of the disease, unless certified by the proper officer as having been properly disinfected; and before selling passage tickets agents shall carefully examine the transit permit and note the name of the passenger in charge, and of any others proposing to accompany the body, and see that all necessary precautions have been taken to prevent the spread of disease. The transit permit in such cases shall specifically state who is authorized by the health authorities to accompany the remains. In all cases where bodies are forwarded under Rule No. 2, notice must be sent by telegraph to health officer at destination, advising the date and train by which the body may be expected. This notice must be sent by or in the name of the health officer at the initial point, and is to enable the health officer at destination to take all necessary precautions at that point.

Rule 6 —Every dead body must be accompanied by a person in charge, who must be provided with a passage ticket and also present a full first-class ticket marked "Corpse" for the transportation of the body, and a transit permit properly signed by the Division Registrar, as provided by the Registration Act, also undertaker's certificate, name of deceased, date and hour of death, age, place of death, cause of death, and if of a contagious, infectious, or communicable nature, the point to which the body is to be shipped, and when death is caused by any of the diseases specified in Rule No. 2, the names of those authorized by the health authorities to accompany the body. The transit permit must be made in duplicate, and the signature of the proper official must be on both the original and duplicate copies. The undertaker's certificate and paster of the *original* shall be detached from the transit permit and pasted on the coffin box. The transit permit shall be handed to the passenger in charge of the corpse. The whole duplicate copy shall be sent to the official in charge of the baggage department of the initial line, and by him to the secretary of the Provincial Board of Health of Ontario.

Rule 7.—When dead bodies are shipped by express the whole original transit permit shall be pasted upon the outside box and the duplicate forwarded by the express agent to the secretary of the Provincial Board of Health of Ontario.

Rule 8.—Every disinterred body, dead from any disease or cause, shall be treated as infectious or dangerous to the public health and shall not be accepted for transportation unless said removal has been approved by the provincial health authorities having jurisdiction where such body is disinterred, and the consent of the health authorities of the locality to which the corpse is consigned has first been obtained: all such disinterred remains shall be enclosed in a hermetically sealed (soldered) zinc, tin or copper lined coffin or box. Bodies deposited in receiving vaults shall be treated and considered the same as buried bodies.

While the several regulations adopted at the Cleveland conference are included above, it is apparent that only so far as contagious diseases are concerned would their adoption become possible under the provisions of section 13, sub-section 5, R.S.O. 1887, unless the first part of the section be held to cover interments in general.

The adoption of such regulations will promote uniformity of action, and if generally adopted, will prevent the many disagreeable and unfortunate delays in the transportation of dead bodies through different provinces and states, and in transference from one line of railway to another. With a view to giving effect to these regulations, your committee has attempted to give practical expression to the views of your Board as expressed at the last meeting. In order to insure proper care and preparation of the bodies of the dead, prior to transportation, it is proposed that for the purposes of these regulations, the seventeen divisions into which the Province of Ontario is divided, for returning representatives to the Ontario Medical Council, be adopted, as the units for which one or more certified persons may be appointed to carry out the foregoing regulations of the Provincial Board.

(*a*) These are:—

1. Essex, Kent, Lambton. (Chatham).
2. Elgin, Norfolk, Oxford. (St. Thomas).
3. Middlesex. (London).
4. Huron, Perth. (Stratford).
5. Waterloo, Wellington. (Guelph).
6. Bruce, Grey, Dufferin. (Walkerton).
7. Wentworth, Halton, Peel. (Hamilton).
8. Lincoln, Welland, Haldimand, Brant. (Brantford).
9. Simcoe, Muskoka, Parry Sound, Nipissing, Algoma, Manitoulin, Thunder Bay, and Rainy River. (Collingwood).
10. Toronto, East of Yonge St. (Toronto).
11. Toronto, West of Yonge St. (Toronto).
12. Ontario, Victoria, York, exclusive of Toronto. (Whitby or Cannington).
13. Northumberland, Peterborough, Durham, Haliburton. (Peterborough).
14. Prince Edward, Hastings, Lennox. (Belleville).
15. Frontenac, Addington, Renfrew, Lanark. (Kingston).
16. Leeds, Grenville, Dundas. (Brockville).
17. Carleton, Russell, Prescott, Glengarry, Stormont. (Ottawa).

(*b*) In order that persons certified may be fully qualified to carry out the regulations, your committee would suggest that examiners nominated by your Board be appointed, before whom candidates shall be notified to appear from the several divisions, and that in accordance with their standing on examination, they shall receive a certificate of qualification.

(*c*) In order that the greatest control may be practised in cases of dead bodies prepared for transportation, it is recommended that there be but one person named in each of the seventeen districts, who would be a resident in the district.

Remembering that the transportation of such bodies is now prohibited, it ought to be understood that the Board's adoption of these regulations is only with a view to meeting a sentiment which, whether unreasoning or not, is common amongst the people of this and the neighboring country, and not with a

view to the profit or convenience of any person. To make many appointments would be to lessen the safe-guards to the public; and that the work could not be a source of notable profit to any one, would appear when it is remembered, that there were but 925 deaths from diphtheria in 1896 in Ontario, of whom probably not more than one in twenty-five died away from home, or some thirty-five persons dead of this disease, would be prepared by such certificated persons annually.

It has further appeared desirable that such modification of the present rules regulating the transportation of the dead be adopted by this Board, to prevent the not infrequent dishonest and illegal efforts of interested persons to evade the law by giving and obtaining false certificates as to the cause of death, and by the fraud being completed by a public funeral.

(*d*) In order that the matter be properly regulated as regards expense, the Board would prepare a schedule in which would be included the cost of the travelling expenses, and of the preparation of the body for transportation; while at the same time a provision would be inserted in the regulations governing the appointment, whereby a disputed account could be taxed in the matter of costs.

(*e*) It would further be necessary to provide that a certified appointee could engage in work beyond his own electoral division only at the request of the appointee for such latter district, or in the case of the sickness or death of any appointee or in other emergency, the power to allow the passing from one district to another might rest with the Secretary of this Board.

Such in brief seem to be the principal points which demand consideration in the report of your committee. Should the report be approved of by the Board, and subsequently by the Government, the several details requiring further working out, could be dealt with again.

All of which is respectfully submitted,

P. H. BRYCE.

MEDICO-LEGAL ASPECTS OF EMBALMING FLUIDS.

By J. J. Cassidy, M.D., Toronto.

January 26, 1898.

To the Chairman and Members of the Provincial Board of Health:

Gentlemen,—The composition of embalming fluid is likely to prove of interest to physicians, now that it is beginning to be mentioned in connection with trials for poisoning by arsenic. There are different kinds of embalming fluid. The following are two of the common formulae used in its preparation:

(1) Arsenious Acid ..... 6 drachms.
Mercuric Chloride ..... 10 drachms.
Alcohol ..... 9 ounces.
Solution Carbolic, acid (five per cent., st.) ..... 120 ounces.
Red Aniline, (five per cent., q.s.) ..... Enough for coloring.

(2) Pulverized Alum ..... 5 lbs.
Arsenious Acid ..... 100 grains.
Water ..... 32 ounces.

Arterial embalming consists principally in the removal of blood from the vessels of the body, followed by the injection into an artery of a quantity of embalming fluid, sufficient to fill the arterial system. A limited form of embalming practised in a good many cases, consists in the introduction by the aid of a trocar and cannula, of a certain quantity of fluid into the thoracic or abdominal cavity, or into both of these cavities, the arterial injection not being attempted In other cases the fluid is injected through the nostrils into the naso-pharynx. thus reaching the eyes, maxillary and frontal sinuses, and afterwards finding its way into the lungs and stomach.

When the arterial system is filled with an arsenical fluid, it follows of necessity, that arsenic will be introduced into the tissues of the stomach, liver, spleen, kidneys and other viscera. Assuming, then, that an individual has been done to death by arsenic, it would be in the interest of the murderer, that the corpse should be embalmed arterially with a fluid, such as one of the above, because, for obvious reasons, the subsequent discovery of arsenic in the viscera by a chemical expert, would be of no legal value in showing that arsenic had been administered with criminal intent, during the lifetime of the deceased. The proof that the deceased had been poisoned with arsenic, would then rest on evidence of the symptoms exhibited during the illness which preceded death, and the post-mortem appearances of the mucous membrane of the stomach and intestines.

Another important point is, that the majority of the undertakers do not know the composition of the embalming fluids used in their business, as they purchase these articles from jobbers, who keep the formulae secret. The arsenical fluids being cheap and reliable, are most used. Then there is nothing to excite suspicion in connection with embalming, which has in fact become quite common in Ontario. A good authority states that in cities and towns an average of sixty per cent. of the corpses of adults are prepared for sepulture in this fashion, in the well-settled country places, forty per cent.

These facts being known, it ought to follow that a fluid quite as effective for the embalmer's purpose and devoid of objectionable qualities from the legal standpoint, should be introduced. We understand that unobjectionable embalming fluids can be obtained at reasonable rates, and we have also been informed that such fluids are now used by Toronto undertakers.

At a joint meeting of Canadian and American executive officers of health boards, undertakers and baggage agents, held at Cleveland, Ohio, June, 1897—Mr. Hohenschuh, a prominent undertaker, stated that he had in every day use, for embalming purposes, a fluid which is cheap, readily used and wholly free from poisonous metals. This is a forty per cent. aqueous solution of formaldehyde. which is now commonly used by sanitary authorities for disinfecting purposes, As an evidence of the suitability of this agent for disinfecting purposes, Mr. Hohenschuh stated that the body of a sheep which had died of anthrax, and had subsequently been embalmed with formaldehyde, had been kept without offense for over two years.

This information is of sufficient importance to merit the attention of the Provincial Board of Health, and should Mr. Hohenschuh's statements be substantiated, it would be proper to advise the Provincial government to introduce legislation declaring the use of arsenical fluids in the embalming of dead bodies to be illegal.

As an evidence of good faith, the formulae of every embalming fluid used or sold in Ontario, should be sent to the Secretary of the Provincial Board of Health.

All of which is submitted,

Toronto, February 5th, 1898. (Signed) J. J. CASSIDY, M.D.

REPORT *RE* LONDON PACKING COMPANY NUISANCE.

TORONTO, January 26th, 1898.

To the Chairman and Members of the Provincial Board of Health :

GENTLEMEN,—Your committee to whom was delegated the duty of inspecting the establishment of the London Packing Co., in September last, reported at the last meeting of the Board that they had proceeded to Pottersville, London Township, and had taken evidence on September 14th, 1897 ; and further that in view of the verbal opinions then and subsequently expressed, regarding the method of removing the cause of further complaints, and the statement made in a letter by the Manager, Mr. Ginge, dated October 8th, 1897, that he was then taking steps to carry out the Board's expressed opinion, "that from an elevated tank, the effluent from the factory, might be pumped and then run by gravity to the lighter land of the field, there to be utilized as a sewage farm," your committee did not deem any more formal report necessary.

Inasmuch, however, as information has been received both from the Reeve of London Township and Mr. Shore, M.P.P., during the last month, that the company has as yet taken no action towards carrying out the proposed improvements, your committee does now beg leave to report :

1st. That it finds from personal investigation in both June and September, 1897, that the disposal of the waste effluent from the factory was not of a satisfactory nature, and that both an aerial nuisance exists, and that the creek was notably polluted below the factory.

2nd. That the sworn statements of different witnesses further give evidence that such conditions of nuisance are more or less constant, and that the then existing modes of disposing of the effluent from the factory were insufficient to prevent a recurrence from time to time of the nuisance.

3rd. That in the opinion of your committee, the abatement of the nuisance especially complained of, viz., the polluted waters of the creek, demands that the effluent wastes be discharged on a much larger area of land than at the present for filtration, and at a distance farther from the border of the stream.

4th. That in the opinion of your committee, the proposition contained in the letter of Mr. Ginge, the manager, will be a simple and efficient mode of abating the nuisance, provided that the land used is kept deeply ploughed and permeable to air, and that after every discharge into furrows, the furrows be turned over the wastes by which the absorption of the gases of putrefaction will be complete.

5th. While sub-soil drainage would increase the porosity of the soil and its ability to deal with the wastes, the necessity for this is a matter of detail depending upon the area of land used, and the amount of the daily sewage.

6th. That the beneficial effects of the utilization of sewage of the London Asylum, and the solid refuse from the packing factory daily hauled to the asylum gardens, leave your committee no room for doubt but that the cost of the disposal of the effluent wastes from the factory can be practically made up by the increased produce from the sewage farm.

7th. That in the opinion of your committee, the local board of health will now be justified in taking action as provided under section 64 of the Public Health Act, sub-section 2, in seeking an order of the court to compel the Canadian Packing Company to at once introduce such methods as will abate the nuisance.

All of which is respectfully submitted.

(Signed) J. D. MACDONALD, M.D.,
E. E. KITCHEN, M.D.,
P. H. BRYCE, M. D.

POTTERVILLE, September 14th, 1897.

Dr. Macdonald opened the investigation, re the Canadian Pork Packing Co., and stated the method of proceeding under the Public Health Act.

Dr. Bryce read the sections of the Act, 9-11, 59 and 64 relating to the taking of evidence.

The evidence taken was as follows :—

John Sleator, sworn, stated :—

I live on Governor's Road just in front of packing house. Have lived there 7 years. The packing house has been here in operation some 5 years. During this time, ever since starting the packing house, it has been a nuisance in spoiling the creek by polluting the water. Before the packing house was there the water of the creek was clean and nice, and I never had to carry water for my cow. There was no smell from it. Blood was put into the water and a sediment bed much like hog manure. I have seen it when tons of maggots could be shovelled out of it.

Some nights we cannot rest and must shut up windows on account of smell. Not so bad when wind is in opposite direction. It is worse on a damp night. It is not noticeable in winter except the rendering. This is not bad.

I am sure that the smell affects my health. The cow's feet stink, and the smell from this makes my wife sick. She has bronchitis and these smells make her sick and to cough.

I have to carry water which I had not before. I cannot say that the milk of the cow is affected, but I do not relish it so much. My cow will hardly take any salt if she drinks the creek water. I can swear that I have smelt the swill for two miles.

(Signed) JOHN SLEATOR.

Bernard Carlen, Sworn :—

I live opposite the packing house beside Mr. Sleator's. Have lived there six years ; was there before the packing house for two summers. Since the packing house came, it is an awful nuisance. I keep two cows and a horse, and since the packing house came the water of the creek on my premises is not fit to use. The water after leaving the packing house comes on to my land first. Sometimes the water is thick with something like hog manure. The water is black as tar sometimes. The water smells, and if you put your hand in the smell is hard to get off. The cows stand in the creek and get the dirty water and mud on them. You cannot wash the smell off their bag. I cannot say that it affects the milk, but I cannot relish it. I sell some butter but the people did not like it, I believe, because people told my customers it was from near the packing house.

The smells are so bad some nights that we must shut doors and windows when the wind blows towards us, and we have no comfort in sleep. It is worse on a muggy damp night. I cannot say that it affects my health. I sometimes cannot bear to go out to the fields on account of the smell. I have two wells and only for these I could not get along at all. I lose much time pumping which would not be necessary if the creek were clean.

Q. Reeve : When the filter beds were in operation, was the creek so bad ? It was worse when it ran out of the beds. The smell is just as bad now or worse when the water is lying on the top of the ground.

His
(Signed) BERNARD X CARLEN.
Mark

James McLaren, Sworn :—

I live on south half of lot 7, concession C. The creek from the packing house runs through my farm, across whole farm. I have been on farm since 1862. From this time till the asylum drain into the creek, it was a fresh spring creek when there was a large flow of water. It was very seldom dry, the woods being more abundant there. When the asylum drained into the creek, sometimes at north part of farm there was a heavy smell in evening, but the water was nothing like as bad as now. After the asylum stopped draining the creek became clear again until the packing house started The year it started, (1893), about July 15th, the water was first noticed bad by us, it being after a thunder storm. The water came down creek and full of dead fish The springs in this place are enough to keep fish alive on the hills along creek. Hundreds of dead fish came down this year. About 16th of June when the creek is running and the factory going there are froth and soap bubbles. When this collects, in a short time the water gets discolored like manure. If allowed to stand and dry it smells like pig manure. This is not like blood.

Q. Reeve : Can you smell it when you take it up in hand ? Yes. It accumulates where water crosses it and appears black, becomes slimy if stopped. I took once a tin pail of water, left it in an open shed ; at end of a week this was loaded with maggots. The cattle go into the creek and stand and drink, then they come up and you can smell it on them if in the upper field. We keep the cows in the lower fields. We have not noticed this smell on the cows in the lower fields from legs and tails. We notice the smells at once if we go down to the creek in the evening. We have never tasted any flavor in butter or milk. I did not cease selling on account of complaint, but the man I sold to went out of the business. I have not cared to sell again till this nuisance was stopped. I do not know that it has affected the health of any of us unless my own, but if I am about the creek I soon lose my appetite.

(Signed) JAMES McLAREN.

Dr. John Gardiner, sworn :—

Am a medical practitioner living in London. Have been so for eighteen years. I remember when packing house was established on the Asylum or Ayr's creek during many years. Have known it since I came as being reported as more or less polluted from asylum sewage. I know that the asylum slop does not pollute it now. I have examined the creek each year since the packing house was established at the solicitation of neighbors.

The first year the water was colored and polluted as far as McLaren's fence, and I found dead fish and rotting, stinking water as far as this. It was colored deep and dark in Sleator's, Carlan and Wetters, but further down gradually lost this.

The next year I found it better ; fish live in it below the Governor's Road about, say July. I attribute this to the attempt they had made to prevent the pollution of stream.

In 1896, the creek was still better, but still not as it should be. I examined it with Dr. Bryce in 1895, and saw the effluent still mingled with blood coloring, and it became terribly offensive in a bottle. It became offensive in stream in pools if left standing.

In 1897, I have not made such careful examinations as other years, except that to-day, I found the bed nearly dry, but when any water was in it, it is not usually so bad as it was then, nor yet as much refuse or crust on the dry bed of creek. There has been more water and there may not have been so much going into it.

With regard to the smell on first examination in first year, I could distinctly note the piggery smell at the asylum gate, and it got stronger near the piggery. I could trace this smell down the creek as far as Mr. McLaren's house, getting fainter as I went. Each summer this has been a little better. This summer I have often noticed the smell at some distance from the creek along the Governor's Road as I drove east. The piggery premises when I visited them, were always clean and in good order.

The filtering basins I have not considered adequate for the work cast on them. The reason is that the effluent is in a raw state, and could only act by means of a rest and not by chemical action and germ life, as the substance does not remain long enough in the beds for this to take place. Q. What will improve this ? If beds are made large enough, and we leave effluent in them long enough, they would work ; but they must be many times larger than now. As the out premises exist at present, they must be very offensive to those living in the immediate neighborhood, and might be a possible source of disease. Q. If the filter beds are deeper, would it be better ? This would be worse. It must be carried away or burned. Q. Would you advise the remaking of the beds ? No, I would not advise this as likely to prove adequate.

(Signed) J. H. GARDINER, M. D.

Dr. W. G. McNeill, sworn :—

Am Medical Health Officer of London Tp., resided in Arva for six years. Have been M. H.O. for six years. During these years I have had complaints made to me regarding Ayr's creek, and have examined it. In 1893, we examined the creek and found it intensely polluted just below the premises of the packing house. The creek was swarming with maggots, and for some distance below, along the creek I found it very much polluted. I examined creek above premises for some distance and found water pure and fish living Below the factory fish were lying dead. This has been the state of things ever since pretty much, but not quite so bad. I attribute the pollution of creek and killing of fish to the foul matter escaping from the packing house.

In 1895, I sent sample of water to the Provincial Board of Health, taken from different points on creek, and retained duplicate samples which I examined and found swarming with bacteria from all points. Mr. Sleator, who resides near premises, stated that the milk and butter in his cellar were more or less polluted from the stench arising from the creek. I have no knowledge of this personally. I found the water above and away below in good condition—i.e., a mile or two below. I examined the premises of packing house and found everything within factory perfectly clean and sanitary ; was never called upon to give an opinion regarding how to dispose of excrementitious matter and sewage.

The Provincial Board of Health were called in and advised a system of filtration. So far as I know, this system has never been properly constructed and carried out. They were not renewed or cleaned and consequently failed to perform the work. I consider the existing and past conditions a nuisance, Since we last met there on June 19th, without any order the packing house people have been discharging the sewage in the ice ponds which drain into the creek, thus polluting without any system of filtration whatever. Regarding the filter beds, if they had been properly constructed and renewed and drained, I think they would have done their work fairly well ; but they have never been cared for as they might have been. I consider the Provincial Board of Health did its duty as well as possible, but the company failed to carry out their instructions.

(Signed) D. G. McNEILL.

M. Larsen, sworn :—

Am foreman of Canadian Packing House Company. Have been so since April 6th, 1896. I am told to look after everything in factory outside and in. I have been absent sick for five weeks ; began again only to-day. We kill twice a week, on an average about 900 hogs a week. We dispose of all offal to the asylum. We discharge floor washings into the field, after sweeping all the dirt, then wash down with water. The dirt and blood go to the asylum. We render fat and grease. The refuse from the vats goes to the asylum. The rendering vats are covered with screwed covers. Any waste from the vats goes down beside the ice pond along with floor washings, since about the 1st of July, except last Friday, when a tile was plugged, and the water there went into the bed near the factory and went to west side of ice pond.

When the water has been high this summer, we allowed the creek to run into the ice pond. When the water gets low, the water of pond runs out. There has been green stuff on creek since the 1st of July, although no sewage has gone in since then to creek. I swear to some water from ice-cellar drains to creek, but nothing else. This runs along the railway track. We built dam in stream to flood the ice pond, to get ice in winter—nothing else. I was not instructed to turn water on to the meadow out of the ditches. No complaints have been made to me of any nuisance during the summer. It is a five-acre lot east of the packing house.

Q. Could not this sewage be sent over to the asylum in tanks? This would be too expensive, as there will probably be over 3,000 barrels a week.

(Signed) M. LARSEN.

George Watts, sworn :—

I mostly work in the field at the packing honse. I do anything there the foreman orders me. Have been at factory for three years. I helped to construct filter-beds on Dr. Gardiner's plan ; did all as I was instructed. They had all the sewage up to the 1st July, 1897, and every time inspectors gave any new orders, they were carried out. No sewage has in my time been turned directly into creek. The water as it leaves tiles under beds is always clear, not colored.

We tried the sewage on the meadowland at the suggestion of the farmers Messrs. Carlen and Sleator, they thinking this would be better. Whenever a bed has been filled with sewage, and after it dries out, we rake off the sediment and dig them over with spade and let them dry good before using again. In this way one bed would rest about fourteen days. When a bed was filled it would empty in about two days and two nights. I think Mr. Ginge would be willing to do anything if it would satisfy complaints. In answer to question of Mr. Sleator, why he raked the creek below the packing house? If it was as he stated it was just to satisfy the complaints.

(Signed) His GEORGE X WATTS. Mark

REPORT *re* PROPOSED SOURCE OF PUBLIC WATER SUPPLY FOR TOWN OF PERTH.

To the Chairman and Members of the Provincial Board of Health:

GENTLEMEN,—According to the instructions to your committee on "Water Supplies" contained in a resolution adopted at the quarterly meeting in May last, the committee visited the Town of Perth on May 19th and inspected the proposed source of public water for the town. The committee of the town council, having this matter in hand, aided your committee in every way to obtain the fullest possible information on the subject.

As will be seen by the map herewith presented, the river Tay, the source of the proposed supply, takes its rise in a series of townships lying west and south-west of the town on the Laurentian rocks, and is first impounded some twenty miles above the town in Bob's lake, later as a feeder for the Rideau canal. Thereafter it forms a beautiful expansion of two or more miles in width, by several miles long in Christie's lake, some ten miles from Perth. Thence it flows between moderately high banks until Badaur's mill dam is reached, some five miles from the town. Thence the stream, after a fall of some fourteen feet, passes down, having an expansion in the large pond at Glen Tay mills where there is considerable shallow water over what at one time was drowned land.

Glen Tay consists of a large woolen mill and the houses of the work people. Some seventy hands are employed at the mill, and the privies are over the stream, which likewise receives the wash water from the scouring of the wool, much of which is foreign wool. The stream then flows down, with here and there a few acres of marsh land which is, however, well covered with vegetation.

A cheese factory is on the bank a mile or two from town, with its privy near the bank, but with no floor washings drained into the river. A few farm yards are near the bank, and some may have drainage running into the stream, but none at present to any great extent.

The water is soft as would be expected from its source, and has the following constitution (see p. 3) from analysis of samples taken:

(1) At Christie's Lake.

(2) Below the tail-race of Glen Tay mills.

(3) At Matheson's dam, the proposed point from which water is to be taken.

The evidence obtained on all hands was to the effect that the stream maintains throughout the summer a flow of an even character, except for an occasional heavy rain, owing to the fact of the storage reservoir letting down the water assigned for purposes of navigation in the Rideau, as also to supply the power at

Glen Tay and the mills in Perth. The volume of water was not estimated but the current is rapid, and the supply will at all times be fresh and largely free from waters which have been stagnant. The analyses show the waters to be everywhere nearly the same in character.

It will be noticed, however, that the sample taken just below the woollen mills was taken at a time when no washings were passing down the stream, and it of course shows no contamination from such source. It is interesting to note that the organic materials, as shown by the free and albumenoid ammonia are somewhat less in the samples taken in Christie's lake, where the width of the lake largely reduces the rapidity of the current, and allows the organic material time to sediment. All of the samples, however, I am pleased to say indicate for dark waters coming off the Laurentian rocks, a high degree of freedom from organic matter.

No. 1. Proposed source (Matheson's bridge):

Free ammonia	0.084.
Albumenoid ammonia	0.14.
Nitrogen as nitrites	None.
Chlorine	2.0.

No. 2. Below Glen Tay mills:

Free ammonia	0.084.
Albumenoid ammonia	0.14.
Nitrogen as nitrites	None.
Chlorine	2.0.

No. 3. Christie's lake:

Free ammonia	0.04.
Albumenoid ammonia	0.12.
Nitrogen as nitrites	None.
Chlorine	2.0.

(Signed) J. J. MACKENZIE.

May 29th, 1897.

While on general principles it is most desirable from the sanitary standpoint to obtain water supplies from rivers as near as possible to their sources to prevent the dangers of increased polluting agencies, yet it would seem that in the present case there is no urgent sanitary reason why your Board should insist that the point of supply should be changed from that proposed, provided that the Town Council of Perth insure such supervision, directly or indirectly, of the stream above the point of intake, as shall effectually prevent pollution from animal matter.

Manifestly what is necessary before your Board can approve of the source of supply taken at the proposed point is that:

1st. The town cause such action to be taken as shall prevent the excreta from privies and the wool scourings from Glen Tay mills, or of houses, barnyards, cheese factories, etc., entering the stream above the source of supply, as they are empowered to under the General Waterworks Act, and under the Public Health Act.

2nd. Or that they make some new arrangement whereby the water can be piped down from above Badaur's dam which will greatly lessen the dangers of pollution and the necessity of supervision.

As it appears in the proposed agreement with the Charlebois Company that "The water is to be taken from the Tay river in the immediate vicinity of Matheson's upper bridge or above that point, with an intake pipe of sufficient capacity to supply the pumps and machinery and answer all requirements, while the company are to agree to protect from all contamination or fouling so that a supply of pure water shall always be provided," the essence of this portion of the contract would seem to be that the company must carry out such supervision in detail, and cause such things to be done as are indicated by this Board as a condition of its approval.

With the possibility of improving the character of the river supply by means of a mechanical pressure filter, which through the use of minute amounts of alum, will undoubtedly lessen the amount of organic matter in the water, the town may very properly insist on such, should the water at certain times or seasons prove to contain such an excess, in order, as the contract states, "that a supply of pure water shall always be provided by the municipality."

Your committee, therefore, would recommend that the proposed source of a public water supply for the Town of Perth to be taken from the river Tay at Matheson's bridge be approved of, subject to the following conditions:

1st. That the Town Council agrees to take such action as shall empower and require either its own town officials or officials of the Charlebois Water Company, acting as town officials, to take such action as shall prevent the river Tay from being polluted by the privy discharges and scouring waters of the Glen Tay mills; and shall cause to be removed any other sources of animal pollution of the stream above the source of supply as either exist or may from time to time be created.

2nd. That the Town Council agrees to maintain, or causes to be maintained, the water supply free of vegetable pollution to such an extent as will prevent the water from becoming unwholesome, by insisting upon its proper filtration whenever the state of the water may, in the opinion of this Board, make such filtration necessary.

All of which is respectfully submitted.

P. H. BRYCE, M.D.
H. E. VAUX, M.D.

REPORT OF SECRETARY *RE* STRATFORD WATERWORKS.

TORONTO, Nov. 27th, 1897.

To the Mayor and Board of Aldermen of the City of Stratford:

GENTLEMEN,—Having been informed by the Mayor and members of the Fire, Water and Light Committee, that it is contemplated to purchase the works of the Company now supplying public water to Stratford, and having been invited by the mayor to examine into the existing condition of these works, I beg to say that I visited Stratford on November 23rd, and with the engineer went over the works, examined the plans showing the distribution of the water mains, hydrants, etc., and obtained data upon which I propose to present for the use of the Council this informal report. I present this as an informal and personal report., inasmuch as it would appear from the terms of the last clause of sub-section 4, of section 3,

of chapter 49, 58 Victoria (1895), that no formal action having as yet been taken by the city council to establish a municipal water works system, and no proposition having been laid before the Provincial Board for its approval, there does not appear to be at present any change in the health conditions of the town, due to the condition of the public water supply, which could authorize the Board to "make further enquiry and report," as to the public water supply of Stratford from the purely sanitary standpoint.

Inasmuch, however, as the city when it purchases the water works would have to submit them to the Provincial Board for approval, I desire to point out to the council, what would seem to be some essential improvements in the water as at present established.

I have learned that though the works have been in existence some fifteen years, there are but 491 services, of which only 202 are supplied to families, apart from the hotels and stores. If it be accepted that there are 2,000 families in 10,000 of a population, it will appear that not more than one-tenth of the people are receiving the advantages of a public water supply. The report of the medical health officer as to the cases of fever due to polluted well water, makes the necessity for extension of the service most evident. Incidentally this point may be illustrated by the city of Brantford with a safe and cheap water supply, having more than 2,000 services, and in the central part of the city, having even two years ago, one service to every five persons, although the works had been established but seven years. This difference I take to be due to the fact that the Brantford supply has been proved to be always bright and clean, of a constant standard of purity, and supplied at a cheap rate. It is hence productive of a large revenue for the city. Your engineer's figures supplied to me, fully indicate a notably larger price of the present supply to consumers than in other Ontario cities similarly situated; but I believe that a still greater reason for the less relative consumption, is due to the character of the water supplied.

Undoubtedly the water of the Avon, coming as it does wholly from springs, except in heavy periods of rain, is a natural supply of normal purity; but when the small size of the stream (a mere creek) is considered, and when its course, wholly through farm lands, where it is exposed to the surface drainage during floods and to the filth of cattle during seven months of the year, is remembered, it is apparent that since it is practically unfiltered, it exposes the people who use it to whatever dangers may arise from animal contamination. Even were there no practical dangers to be feared, yet the unprotected nature of the stream and its turbidity during wet periods must greatly affect its acceptability to many who otherwise would use it. The fact that notable revenues are obtained by the Company for its use for fire purposes, and for the railway shops, may doubtless be reasons why its improvement for domestic purposes is not regarded by the Company as necessary; but these seem to make the urgency all the greater for the city to obtain possession of the works for the general advantage of the citizens. While but indirectly a health question, yet inasmuch as very recent events have shown how intimately protection against fire becames a public health question, since state and private aid is even now being supplied to sufferers from fire, and how privation and suffering tend to develop conditions favorable to disease, I deem it proper to point out what was observed by myself, and confirmed by the engineer, that the supply main to the pumping wells would prove wholly inadequate for any emergency demanding a sudden and continued large supply of water. The size of the pipes in many parts of the city are further inadequate for such an emergency.

Without dwelling further on these points, I deem it proper in conclusion to point out that it is urgently necessary that the city obtain possession of the water works for the following reasons:

1. That by proper filtration beds, mechanical filters or sub-surface galleries of perforated pipes, the naturally pure waters may always be supplied in a state of clearness and constant purity.

2. That proper steps may be taken for protecting the course of the stream against pollution with animal and vegetable matters.

3. That a supply reservoir may be constructed which will at all times be adequate for any fire emergency.

4. That the system may be extended throughout the town so as to be available to every householder, and thus make it possible to close all polluted wells.

5. That the price to consumers may be so reduced that its use will become general.

I have no opinion to offer as to what the works are worth, or as to the conditions which should be complied with for their purchase; but from what has been stated, it seems apparent that it is the duty of the city to become at the earliest possible moment, the possessor of the water works.

I have the honor to be,
Your obedient servant,

P. H. BRYCE,
Secretary of Provincial Board of Health.

REPORT OF COMMITTEE ON SEWERAGE, *RE* THE SEWERAGE SYSTEM OF PEMBROKE.

To the Chairman and Members of the Provincial Board of Health:

GENTLEMEN,—Your committee on sewerage begs to present for consideration its report on the plans of the proposed sewerage system of Pembroke. Pembroke, a town of some 4,500, is beautifully situated on a porous soil on the River Ottawa, 100 miles above Ottawa City. From the map herewith presented it will appear that the town has three distinct drainage areas, owing to the Maskrat river emptying into the Ottawa from the south, while behind the town the Indian river flows eastward into the Muskrat. In almost every direction the soil slopes toward one or other of these natural drainage basins, and except along a small section of the business street, the level is such that a good fall is obtained for the sewers. On a number of streets indicated on the plans, sewers or drains, mostly of a private character, have been constructed in most cases of plank draining to the nearest stream. During the last several years a number of tile sewers have however been built. These have been constructed by, in each case, a number of citizens joining together as a syndicate; having an engineer prepare the plans and estimate the cost, and then submitting the scheme to the town council for its approval. The construction of these, generally speaking, is supposed to have followed the plan of sewerage laid down in the survey made by W. C. Brough, a Canadian engineer. While the levels of these seem to have been made suitable for their immediate necessities, yet the fact that they are really private sewers owned by a few men precludes their application to the needs of the ratepayers

generally on the sewered streets, except on such conditions as may be laid down by the owners. The town has not any power over them, does not require or guarantee their maintenance or repair, and has provided as yet no scheme by which the supervision of the house connections which have been mady or may hereafter be made, shall take place.

Under the circumstances just set forth, the Local Board of Health of the town passed the following resolution.

22nd May, 1897.

Moved by Mr. Bone, seconded by Mr. Martin, that the report prepared by Dr. Dickson, medical health officer of the town of Pembroke *re* sewerage be approved, and that he be authoriz d to forward same to the Provincial Board of Health, Toronto. Carried.

From the correspondence herewith submitted it will be seen that the Town Council did not for a time realize either that its immediate supervision of the sewerage of the town was demanded in the future interests of the sanitation of the town, inasmuch as no by-law had been passed for the supply of money for the construction. The intention of the amendment to section 30 of the Public Health Act of 1895, being to have all sewerage systems in our towns and cities approved of by your Board before construction was proceeded with, your committee, through the Secretary of the Board, visited Pembroke on the 11th inst. and met members of the local board, the sewerage committee of the council, the mayor, and the town engineer, and with them examined carefully the plans, the topography of the town, a sewer under construction and discussed the problem of how best to have the work proceed at present under construction, and likewise to provide for the future supervision of the sewers and the inspection of the house plumbing and sewer connections as well as to have some regular system for the payment for sewers adopted. All were agreed that the syndicate plan of building private sewers was but a temporary make-shift, owing to the inability at present of having a money-by-law carried for building a more complete system. The difficulties have been set forth in a supplementary report prepared by the town engineer which is presented herewith for your perusal.

From the specifications drawn up by Mr. Brough, which are herewith submitted together with the plans, it will be seen that if the present engineer's suggestions are adopted by the council a fairly satisfactory mode of procedure will have been instituted. It is apparent that the possibility of a general system consisting of a series of short sewers being made to the various rivers, for the town, under the application of what is now known as the local improvement plan of payment is applicable, under Sec. 597, of the Municipal Act, where it is provided that their construction may be proceeded with either (*a*) on petition of a sufficient number of ratepayers or (*b*) on sanitary grounds, upon a resolution from the local board of health being confirmed by a two-thirds majority of the town council. In this way not only payment for construction but supervision by the town is provided inasmuch as they are works owned by the town. Their maintenance is likewise ensured as well as the conditions under which house connections are to be made.

Your Committee therefore would recommend:

1st That the plans for the general sewerage of the town of Pembroke as set down in the plans of Mr. W. C. Brough be approved of with such modifications as the town engineer may at any time in the future deem necessary.

2nd. That all sewers at present under construction be carried out as a part of this plan, and under the supervision of the town engineer, subject to the

council or its sewerage committee and of the local board of health, in so far as the latter is required under the public health to see that the plumbing of houses is carried out along the principles laid down in that Act.

3rd. That the council shall adopt as the town plumbing by-law the model plumbing by-law adopted by the Provincial Board of Health in 1897 in place of the plumbing by-law at present in Schedule A., in so far as its provisions are more suited to the local conditions and more recent views on the subject.

4th. That it adopt some system, such as that set forth in the supplementary report of Mr. Morris, the town engineer, whereby the whole work of construction and future maintenance of the sewers will be placed under the supervision and control of the town engineer and such inspector or inspectors as may be approved of by him and the local board of health.

5th. That so long as the several streams referred to in this report be utilized for sewage disposal, that sewer outfalls be carried into deep water and so arranged as that local nuisance will be avoided.

6. That the future disposal of the sewage be subject to the general law relating to pollution of streams, and that the permission of this Board to utilize the streams for the disposal of sewage shall not in any way relieve the town of any responsibility which may at any future time arise from this method of disposal.

All of which is respectfully submitted.

P. H. BRYCE.
E. E. KITCHEN.
H. E. VAUX.

TORONTO, July 20th, 1897.

DEAR SIR,—I beg to acknowledge receipt of your letter of the 13th inst. and to say that the sewerage plans for your town will be submitted to the Board for its consideration in a few days.

I have the honor to be,
Your obedient servant,

P. H. BRYCE,
Secretary.

J. L. MORRIS, Esq., C.E., Pembroke, Ont.

PEMBROKE, ONT., July 13th, 1897.

DR. BRYCE,

Chairman of Provincial Board of Health, Toronto:

DEAR SIR,—At your request, I make the following report with reference to the system under which the town of Pembroke is constructing certain sewers on Peter, Pembroke and Sydney Smith streets:—

Owing to the present financial position of the corporation, having just passed a bonus by-law for the sum of of twenty thousand dollars towards the construction of the Pembroke Southern Ry., the possibility of the construction of a system of sewerage by a general rate is not at all likely for some years.

The construction of the above Peter street sewer by means of assessment on frontage did not meet with the approval of the majority of the freeholders. A minority of the freeholders interested made petition to the town council asking for the privilege of constructing sewers on Peter, Pembroke, Sydney Smith and William streets. The petition was granted, with the provisos that "All works shall hereafter be under the control of the corporation; that the work shall be under the superintendence of Mr. J. L. Morris, C.E., and that it shall be carried out as fully in accord with Mr. Brough's plan as practicable."

An understanding was between the council and petitioners to the refunding of the cost of each individual proportion to the petitioners. Having given the system under which we are at present constructing this sewer, consideration, I have found that there is much difficulty in arranging for the cost of entrance for others than the petitioners. There is a suspicion that the petitioners are constructing the sewer, not for the general benefit, but for the small gain.

Also, though constructing the main sewers in a satisfactory manner, there is no control over the house connections by the corporation in any way. By embodying in a resolution the following requirements, the town council could make the present system of construction a satisfactory means of securing a permanent and sanitary system of sewerage, viz.:—

(1) That all mains and branches on any street shall be in accord with the plan adopted by he council and accepted by the Provincial Board of Health.

(2) That the construction of all mains and branches shall be under the control of he corporation or a sewerage committee appointed by them.

(3) That the construction of all sewers and branches shall be under the supervision of a competent engineer, who shall appoint a competent inspector to inspect all work done.

(4) That any person with lands adjacent to the sewers shall be at liberty to connect his house sewerage and drainage on payment of a just proportion of the cost of mains and branches as determined by the petitioners.

(5) That the corporation cause to be passed "a plumbing by-law" to control the proper sanitary construction of all house connections.

(6) That the corporation appoint a competent inspector to carry out said by-law in conjunction with the supervising engineer and medical health officer of the local board of health.

(7) That the corporation will be responsible for all damages incurred by construction of said sewers.

(8) That the payment of supervising engineer and inspector be at the expense of the corporation, the supervising engineer to prepare proper records at the completion of any works.

(9) That on the construction of general system of sewerage by the corporation at any time hereafter, the petitioners shall have refunded to each a proportionate share of the cost of the sewer as determined by the corporation.

Yours respectfully,

J. L. MORRIS, C.E.

REPORT OF COMMITTTEE *RE* THE PROPOSED SYSTEM OF SEWERAGE FOR THE TOWN OF PERTH.

To the Chairman and Members of the Provincial Board of Health :

GENTLEMEN,—At the request of your Secretary I visited the town of Perth on May 31st, and inspected the route and outfall for their proposed system of sewerage.

The Town of Perth has a population of 3,800, and for the past few years has not grown to any appreciable extent.

For purposes of description it may be divided into three parts, east, west, and a central or inland portion, which is surrounded by the canal and part of the river Tay.

The proposal is to allow the sewage to empty into the canal by four outfalls at different points. Two of these outfalls are well within the town, but they serve so small an area—in one case the corner of a block (Willson and Harriett streets) and in the other a portion of the town not densely populated—that your Committee is of the opinion that they will be innocuous.

The two main sewers, one serving the east and the other the west, have their outfalls well below the residential part of the town. The canal is about sixty feet wide, flows at the rate of perhaps a mile and a half an hour, and has a constant depth of six feet of water.

As the town is about to introduce a system of water supply, it was thought to be a favorable opportunity, when the streets were open, to lay sewer pipes in the same trench. Whilst theoretically the method is perhaps open to objection, yet in the case of the Town of Perth it appears to be the only feasible method of accomplishing what has long been felt by them to be greatly needed. The exceedingly hard and abundant rock which underlies the town renders excavation very costly.

The system proposed is the separate, although provision is made to allow for the disposal of a considerable quantity of roof water. In some parts of the town cellar drainage is not provided for, owing to the shallow depth at which the pipes are laid, but as no separate pipe for this service is included in the estimates, it is perhaps as well from a sanitary point of view that the cellars should not be connected with the sewer pipes.

Some slight alterations as to outfall were made by your committe and favorably considered by the engineer, Mr. Keefer, of Ottawa, and from whom together with the mayor and officials of the town, your committee received every courtesy and attention.

All of which is respectfully submitted,

(Signed) HARRY E. VAUX.

June 3rd, 1897.

Your Committe begs further to report that in order that the Board may more clearly understand the dilution which will be given the sewage of the town of Perth after it is carried into the Tay canal your committee recalls the fact that there are to be four particular outfalls. While, of course, a nuisance might arise from sewage delivered at one point if there were insufficient dilution, it will be apparent that if the local sewage is divided into four parts that the dilution will be four times as great. However, the dilution in this case, where the river Tay supplies the canal with a depth of water of six feet by sixty feet in width and flowing at the rate of one and one-half miles per hour, will be very great indeed. Estimating a population of 6,000 with fifty gallons of sewage per diem, 250,000 gallons will be poured into the canal every twenty-four hours. The engineer, Mr. C. H. Keefer, of Ottawa, has supplied a measurement of flow made four miles above the town by Mr. J. C. Mignault, C.E., giving seventy-five cubic feet per second. With the above amount of sewage in twenty-four hours, there would be only one-quarter of a cubic foot per second, or one part of sewage to 600 of water, a very good degree of dilution indeed

Regarding the danger from sewage pollution it may be said that the stream descends rapidly to the lake expansion, forming a part of the Rideau canal and that there are no users of the river water, as a village, to be affected below the town. With, therefore, the proviso that the town is to be prepared to meet any claims for damages which may at any future time be shown to be brought about by the disposal of the sewage of the town, and that the town will when instructed by this Board modify its method of sewage disposal in accordance with any suggestions the Provincial Board may make, your committee would recommend the approval of the proposed sewage outfalls into the canal and the plans for the sewerage of the town which have been submitted to it.

All of which is respectfully submitted,

(Signed) P. H. BRYCE,
H. E. VAUX.

REPORT *RE* MILTON CEMETERY.

By P. H. Bryce, M.D., Secretary.

November 11th, 1897.

Mr. Chairman, and Members of the Provincial Board of Health:

Gentlemen:—I beg to report that as provided under Sec. 489, of the Municipal Act, I visited the town of Milton and examined the site of the proposed extension of the town cemetery, permission for which had already been granted, subject to the terms of said section 489, by the town council and local board of health.

After my inspection of the proposed extension of the cemetery, a rough plan of which is herewith submitted, I forwarded the following letter to Mr. W. H. Lindsay, secretary of the Milton cemetery Co.

Toronto, June 1st, 1897.

Dear Sir.—In compliance with the request contained in your letter of May 6th, I would say that I visited Milton on May 25th, and in company with the representatives of the town council visited the present cemetery and investigated the fitness of the adjoining land as the site of the proposed extension of the cemetery.

It is almost needless to say that the location of the present cemetery is a most admirable one, not only because of its convenience of access for the townspeople, but still more because of its location practically outside the town. The only objection which might be raised is to the character of the soil in some parts as being clay. This defect may be largely overcome by thorough drainage in the manner suggested by me.

Under the amendment made to the Cemetery Act in the Session of 1897 of the Legislature, the power to enlarge cemeteries in towns has been given to cemetery companies, etc., and I have no hesitation in recommending to the Provincial Board of Health that it approve of the extension about to be made to the Milton cemetery. It will be well to have a small drawing made showing the position of the cemetery, the town, the river, etc., so that I can in a few words explain the relative position of the cemetery to the Board when it again meets.

As the approval is formal as required under the Act, and as I cannot conceive of any objections being raised by the Board to the proposed extension, I would advise that if the new ground be now required, the Company do at once proceed with the draining of the new land and laying it out in plots.

Trusting that this letter will be satisfactory to the Trustees,

I have the honor to be,
Your obedient servant,

(Signed) P. H. BRYCE,
Secretary.

Your Secretary would, in view of the facts set forth in the letter of June 1st, recommend the adoption of this, report, approving of the situation of the site for the extension of the burying-grounds of the Milton Cemetery Co.

All of which is respectfully submitted.

P. H. BRYCE,
Secretary.

HOME SANITATION IN RELATION TO CONSUMPTION.*

Address by P. H. Bryce, M.A., M.D.

Your Excellency, President and Members of the National Council of Women:

Ladies and Gentlemen,—I purpose in the few minutes at my disposal this evening to refer to a phase of a question which is of overshadowing importance to every public health officer, every patriotic citizen, and yet more to the great mass of the people themselves. I need not tell this audience that the question of how the great *white plague* is to be fought holds the first place in the work of every sanitary and benevolent association whose operations are within the great industrial centres in the populous countries of northern America and of Europe where its ravages have been described from the dawn of earliest history till now. Especially do I not need to explain to this Association, which has done so much in organization for the uplifting and bettering of the condition of their fellow-country women, that upon the thousands of workers in the dusty woollen and cotton factories, in the dress-making and sewing room, in the book-binderies, indeed in factories of every kind, this disease lays the heaviest hand, and that from this class, earning oft-times but little above the lowest living wage, the annual harvest cut by the reaper Death is richest and saddest. Neither do I need to give many statistics to prove that town dwellers, as compared with residents of the country, pay double the death penalty, and that for many it is a living death, where day after day with failing strength they labor on to earn the pittance which only serves to prolong the death agony.

This is not the place to discuss the commercial competition or the economic and social causes which produce these unfortunate conditions. Suffice it to say that since Canon Kingsley wrote "Alton Locke" and the German writer Frederick Engels described the condition of the English working classes in 1844, the factory system has been transplanted to the American continent, and that in the large cities, notably of the United States, it has developed, owing to the constant influx of the proletariat of every European country, unsanitary conditions as great as in those countries whence they have come.

In New York and Boston there die annually three out of every thousand people from this disease, and the authorities there have taken action lest the disease spread as fatally as a pestilence. Volumes have been written upon the dependence of consumption upon population density in London, Glasgow, and other great cities of Britain, but never has there been a more terrible illustration of what this density means than in a recently issued publication of the Health Department of New York City. A statistical study of the 4th ward of New York by the Health Department for the last three years has been made. I quote a few of the figures.

In 1896 there were 663 inhabited houses with a population of 18,323, or 27.6 to a house.

Houses infected 248, per cent. of whole 37.3.

Total cases 541 or 0.81 of one case for every house in the ward.

Cases per 1,000 in 1894.....9.4
" " " 1895.....8.7
" " " 1896.....11.2

——29.3 persons per 1,000 in three years

1st. The further statement is made that certain streets year after year have a proportionately greater number of houses infected.

*Address delivered before National Council of Women, December 21st, 1897.

2nd. That the three years show no great increase in infected houses.

3rd. That of the infected houses the average of cases in each is 2.81 persons, or more than one in every ten of the average inmates of infected houses.

4th. That there were 70 houses in which three or more cases occurred and the cases in these houses increased year by year from 88 to 95 and to 119.

5th. That some of these have had as high as 8 and 11 cases per house in three years.

The Medical Inspector further remarks that such houses seem permanently infected and should either be renovated from top to bottom or torn down.

Several years ago I collated the deaths from consumption in three of the older Ontario counties for ten years and found that the same name occurred more than once in thirty-three per cent. of all cases and of these the average deaths for every name was 2.7. But I have again resorted to these records, and find in some of the newly settled and generally healthy counties, the same name occurring in the same or succeeding year and on further searching generally find from the father's name that such are children of the same family, or it may be a mother and son, or a daughter and mother. In certain cloistered sisterhoods in Germany this permanence of house infection has been fully illustrated by statistics. It is further seen in reports like that of the Massachusetts Board of Health that where the dense population of the towns have a mortality of 1,000 deaths from consumption there are not more comparatively than 725 in sparse districts, while it is further shown that though the highest mortality is between twenty and thirty years of age, the total death rate from this disease between fifteen and sixty years is some thirty per cent. of all deaths for the period, and of these the larger number are females.

I have thus briefly, ladies and gentlemen, set forth three most notable facts relating to the mortality and prevalence of consumption, these being:

1st. That consumption is a disease rather of the city than of the country.

2nd. That it is a disease directly associated with the density of population.

3rd. That it is a disease essentially of house life, and that it attaches itself with greatest persistency to particular houses, and naturally to particular families who occupy them year after year.

4th. That in our older settled counties, as in the cities, the number of infected houses slowly increases.

5th. That second and more cases are found in many instances to follow a first case in a house within a year or two.

6th. That in the centre of the worst infected districts of large cities some houses will year after year continue free from the disease.

If, then, we have before us facts of the greatest importance, we must, if we would learn the lessons they teach, see two points with perfect clearness.

1st. That the houses and work-rooms where consumptives live must be maintained sanitary, and that constant and thorough precautions must be taken with regard to the expectorations and emanations of the sick in them.

2nd. That the sick must be removed from such dwellings, often small, crowded and unclean, to other more sanitary surroundings if their recovery is to hoped for.

I deem it a most fortunate and auspicious circumstance that to-night we have present representatives of three distinct organizations, all with one common thought and one single aim, viz., of bringing direct aid to the very class whose

condition I have described, both by relieving present needs and by devising new schemes and methods for preventing contagion and for supplying means of cure for persons attacked with this most fatal disease. Need I indicate what these three distinct organizations are? First, we have the scheme, fast becoming an organized fact, into which Her Excellency the Countess of Aberdeen has, with an enthusiasm peculiarly her own, thrown all her energies during the past year. Of course I refer to the Victorian Order of Nurses. Second, we have that other organization whose local society is so ably presided over by its present president. To this, as well, Lady Aberdeen has lent her time and energy. Third, and lastly, we have in the speaker the representative of that provincial organization, the Board of Health of Ontario, which the Government appointed fifteen years ago to study the causes and devise means for preventing or lessening the prevalence of the communicable diseases.

I desire to say a word or two regarding the distinctive objects of these several organizations, and something of the work which they have in common in dealing with consumption.

(*a*) The Victorian Order of Nurses is intended more especially to supply aid to persons actually sick and who, owing to limited means or accident of residence, are not able to avail themselves of the regular nurses. The nurses of the Order, so far as a large city is concerned, are to attend the sick at less than ordinary rates and in the case of the poor to give regular but intermittent service where such is found sufficient. Essentially their work is one of relief. It is fighting in the front of the battle. It is the aid to the wounded. It is heroic. It implies personal fatigue. It may involve serious individual danger It is a work which appeals to our readiest sympathies. Wherever applicable and wherever demanded it ought to and must succeed. It is a charity!

(*b*) The National Council of Women is our second organization, and without entering fully into its various aims and works, I believe it may be most fitly termed a movement of reform. With the rapid development of our country, with cities springing up on every hand, with trade and commerce making amazing advances, with new industries, as mining, railways and shipping, life has taken on an intensity of action never before approached or imagined. Like our means of transit, men and women live at lightning speed It is essentially an age of capitalizing, with all of good and evil which this may involve, of combination on the one side and competition on the other. In any case this new age of organized capital has developed conditions which must be met by corresponding combination in action to prevent the evils which inevitably tend to grow up along with such development. Trades-unionism and socialism in all their modifications have been the organized means in what seems a war between capital and labor.

But there is another movement, a Christian socialism, which this National Council of Women represents. It includes both remedial and preventive measures. It attacks the sweating system: it demands protection against child-labor and too long hours of labor. On the other hand it demands decent accommodation in shops, factories and work rooms: it desires to prevent the effects potent for evil from neglect of the children; it insists that technical education of school girls in domestic arts be available for the working classes in our public schools. It attacks that immorality which obtrudes itself upon the public. Without being a censor of public morals, it insists on the right of every good citizen to protect himself and his family, by demanding a high standard of living and acting for the community of which he is an interested unit. Essentially the Council

represents the moral sense of the women of Canada, taking its place in and stamping its impress upon all social movements which affect so intimately, the well-being and the happiness—indeed, the very existence of the sex.

As regards the purposes of the Provincial Board of Health, its duties as defined by statute are to collect and distribute sanitary information, and to study statistics of every kind relating to the public health of the Province. Further it is required to investigate the causes of disease, and notably to take steps both to suppress and prevent outbreaks of the same. It must thus be evident that such provisions lay upon the board duties of the most varied and extended character. Much has been done, and to-day the most pressing, the most important and withal the most difficult task it has to perform is the one I am discussing too briefly to-night, viz.: How shall the prevalence of consumption and the suffering, the deaths and the economic losses caused by tuberculosis be lessened and prevented? I am sure I am correct in saying that it is the Board's fixed determination to publish widely and constantly the facts of the great prevalence of this fatal disease; to point out the numerous physical, social and commercial causes tending to produce such prevalence; and to invite and encourage every citizen, every charitable association, every municipal body and finally every Government to unite and co-operate in a work which appeals to every one, who sympathizes with the afflicted and their friends who appreciates the economic and social losses due to its ravages, and who believe that this disease is but one of many, which experience has shown is capable of being cured, and still more easily prevented.

Such as I have described are some of the "aims and purposes" more or less distinctive of the three organizations to which I have referred.

I would now briefly endeavor to indicate some of the points toward which their several labors converge, or which indeed are common to all in dealing with tuberculosis, or if you prefer it, consumption.

From what has been so fully demonstrated, it is seen that consumption is essentially a house disease. As Deputy-Registrar-General, I am able year by year to obtain in town by town, and municipality by municipality the list of deaths due to this disease. Legislation too may be obtained enabling Boards of Health to have the existence of cases of the disease notified, as is now done in New York. But what then is to be done? Boards of Health cannot be expected to supply medical skill and nursing. They may, however, insist that workrooms and factories be clean, light and well ventilated. They have yet, however, no powers or facilities for dealing with cases, no hospitals or homes to which they can recommend them to go. At this point then, surely there is something for the Victorian Order of Nurses, the National Council of Women, indeed for every charitable association to do. The nurses may visit the afflicted, may teach them how imperative it is that they use daily every available means for dealing with their sputum, and lessening the dangers of infection to the other inmates of the household, and perhaps lend aid in other ways. They can supply information to the Health department with regard to the condition of houses as regards defective drainage and unsanitary surroundings. What more? They may perhaps obtain through charitable institutions as the Women's Council, or private persons charitably disposed, assistance whereby the sick can, in some instances, be removed during the early and curable stage of the disease to some rural part of the country or other scenes where better air and better food are more easily obtained. As matters exist at present, however, I do not see that they can do much more. Yet this would be something!

What can our National Council of Women do? They can by banding themselves into sanitary committees, as is done in large centres of England, as Leeds, or as is done by the Women's Protective Association of Philadelphia, take up the work of insisting on every kind of municipal sanitary reform. Our workshops, our factories, our bakeries, our milkshops are often most unsanitary. Again by steadily assisting the health authorities to create a public opinion in these matters which shall produce radical reforms. More than this, they may by actual slumming committees collect such an exact mass of information as will enable the health authorities to pass and enforce by-laws dealing with the many existing sanitary evils. Much may gradually be accomplished by perseverance along these lines.

But surely we must see that the practical value of all such aid as these two or any number of such organizations may give is handicapped at every stage by one dominating need.

Dr. Gilbert Smith, Chairman of the Committee of the Social Science Congress of England, said fifteen years ago that our ordinary hospitals are not the places for such chronic diseases as tuberculosis. It is sea-side and lake-side hospitals for the scrofulous children and "Homes" in the uplands for the tuberculized whether children or adults. The mournful story year by year comes from thousands of homes in the Province that home treatment of consumptives has been and is a failure, and this especially and notably in the houses of the working classes.

What do we find in Toronto? In 1896, of the 291 names taken in succession of those who died from consumption there were 184 deaths between 15 and 60 years, 16 classes of tradesmen and laborers were represented equalling 101 deaths, 53 housewives in every sphere in life, 10 other occupations and professions equalling 30 deaths. Returns, as the following, of the deaths in a single old town in one of our early settled counties gave out of 41 deaths from consumption occurring in eleven years 27 per cent. of the total deaths from consumption as occurring under four family names.

Of these there died of one family name, 1 in 1887.
1 " 1888.
1 " 1889.
2 " 1893.

Of these there died of one family name, 2 brothers in 1895.
" " " " 2 sisters in 1886.
" " " " 1 in 1889.
" " " " 1 in 1896.

What can such do for themselves in the matter of cure, what is possible as regards protection of their families? How much more the dangers in the crowded houses of the city? There they cannot help themselves, and there moreover we cannot help them either. Only last month there died near my residence a carpenter who had been ill nine months, had never done a day's work, during the time and who had a family of eight children for months living in a house of but one or two rooms. What safety possible for them?

But, ladies and gentlemen, I need not relate such distressing examples. I assert, after fifteen years' experience, that there are but three plain lines of action for us.

1. Fight by all our combined energy to prevent, by education of the people and by legal enactment, every cause inducing ill-health and thereby consumption.

2 Remove the sources of immediate infection from the small and poorly-equipped homes and the factories and work-rooms of our working people

3. Build in every county *homes* for consumptives, to which in the early stages of the disease, they may go and by exact *regimen*, abundance of food, of fresh air, of sunshine, of exercise, of rest, and of sleep, maintain the fight against the destructive forces of the disease, have a fair chance of saving their lives to their families and the state, and at the same time remove the danger of infecting those they love.

You ask, How we shall accomplish this? Is it difficult when I tell you that we have to-day 45 subsidized hospitals in Ontario where there were but ten twenty years ago? That we have thirty-one orphanages where we had but thirteen twenty years ago? And that we have fourteen county homes for the aged poor where we had only one twenty years ago?

But we have more than this; we have a National Association of the noblest women of our country banded together with a motto, "Do unto others as ye would that others do unto you," with the highest lady in our land its president. More than this, we have this same lady lending her energies to this other nursing scheme, yet another evidence of the depth and breadth of her Christian philanthropy. Need I ask? Need I do more than suggest that once more whilst she is with us, Her Excellency will call together physicians, nurses, philanthropists by whatever name called, to organize and to ask that our state and municipal charity be extended to gives us "*homes*" in every county which will aid in making our charity fruitful in practical life-saving as well as in smoothing the pillow and speaking words of hope and comfort to the dying; and by this signal act lay yet one more blessing upon us, who so long as womanly goodness and christian graces are honored in Canada, will make of her name a household word, a name engraven on the hearts of the people of our country.

Municipal sanitation has cut in two the mortality from typhoid and has banished smallpox during the past fifteen years. Shall it be said that Toronto, Ontario, Canada, will not during the next fifteen years have done as much with consumption?

PART III.

REPORTS OF LOCAL BOARDS OF HEALTH

CITIES.

BRANTFORD.

BRANTFORD, November 10th, 1897.

To the Chairman and Members of the Brantford Board of Health:

GENTLEMEN,—I beg to submit to you the annual report of the sanitary condition of the city for the year ending October 31st, 1897:—

Mortuary Statistics:—The number of deaths reported in the city for the year past, viz., from November 1st, 1896, to October 31st, 1897, was 294, which on a total population of 16,539 gives a death rate of 15.01 per thousand persons.

For the two preceding years the death rate has been as follows:—In 1895, 16.38, and in 1896, 13.88 per thousand.

The table below will give the monthly rate and a summary of causes:—

	Total deaths.	Typhoid fever.	Diphtheria and croup.	Diarrhœa and chol. infantum.	Measles.	Pneumonia.	Phthisis.	Under— 1 year.	Under— 5 years.	Over— 60 years.	Over— 80 years.
November	23	.....	1	.. ..	.. ...	6	2	5	7	6	3
December	25	1	2 {1 diph. 1 croup}	.....	.....	4	2	3	5	7	.....
January	18	1	2	.....	.....	3	5	2	3	5	.....
February	29	.....	.....	.....	... .	3	1	6	7	11	3
March	26	.....	....	. ...	.....	3	3	2	3	6	3
April	22	....	2 {1 diph. 1 croup}	.....	1	.....	2	12	13	6	1
May	21	.....	.....	.. .	1	2	1	6	7	3	.....
June	15	.....	.....	.....	.....	1	1	1	1	4	.... .
July	14	.....	1	1	.....	.... .	.....	3	4	2	1
August	19	.....	1	5	.....	1	1	5	8	5	1
September	21	2	.....	4	.....	2	.....	6	6	6	1
October	16	1	1 croup....	.....	.....	.....	3	2	2	6	2
Totals	249	5	10	10	2	25	21	53	66	67	15

Contagious Diseases:—The following contagious diseases have occurred in the city during the last twelve months, with the deaths in each case as shown by the following table:—

	Typhoid fever.		Diphtheria and croup.		Scarlatina.		Measles.		Others, as chicken-pox, etc.
	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths.	Cases.	Deaths	
November	.....	.....	6	1	3	.....	.....	....	
December	2	1	10	2	1	.....	.....	.....	
January	2	1	4	2	2	.....	.....	.....	
February	.....	.....	4	.....	5	.....	.....	.....	1
March	.....	.....	1	.....	6	.....	23	.....	
April	.....	.....	3	2	.....	.....	13	1	
May	.....	.....	.....	.....	1	.....	.....	1	1
June	.....	.....	1	.....	12	.....	.....	.....	
July	3	.....	3	1	4	.....	.....	.....	
August	3	.....	2	1	1	.....	.....	.....	1
September	8	1	8	.....	1	.....	.....	.....	
October	13	1	5	1	3	.....	.....	.....	(8 undecided cases.)
Totals	31	4	42	10	39	.....	36	2	11

Total number, 159 cases, 16 deaths.

Typhoid Fever:—The total number of cases reported from the city for the year was 31, occurring as the above table will indicate. This, compared with the number of the preceding year, gives a very pleasing decrease, for in 1896 there were 61 cases of typhoid, or almost twice that of 1897.

The cases have this year been in the majority of cases mild in type, although four deaths have resulted.

Out of the 31 cases reported, 7 were users of city water, 3 of both city and well water, and 21 well water users.

City Water:—As the water supply of a place is an important factor in the health of the population, and especially in the part it plays in regard to the spread of typhoid fever. So to know how we were situated in this matter, I had samples both of the city and well water sent to Prof. J. J. McKenzie, Provincial Bacteriologist, for examination, and have here to report the following, which gives us the probable reason of so few cases of typhoid in city water users as compared with well water users, for it fully demonstrates the superiority of the city over the well water as seen per report.

Report on Water as per Examination of Prof. J. J. McKenzie, B.A., Toronto.

Samples collected by Sanitary Inspector Wallace and myself in sterilized bottles, September 20th, 1897:—

Bacteria per c. c.

Canal above waterworks	B. 1,750.
Canal at White mill	B. 2,110.
Tap at pumping station	B. 58.
Tap at health office	B. 60.
Fountain at Victoria Park	B. 72.
Cocker's well	B. 7,850, suspicious.
Mrs. Lewis' well	B. 74,200, B. Coli B.P.
Joseph Elliott's well	B. 32,800, B. Coli B.P.

Cocker's well suspicious, Mrs. Lewis' and Jos. Elliott's well both condemned, having B. Coli and several colonies of B.P., which is always evidence of organic pollution.

Diphtheria and Membranous Croup:—During the last year there have been reported at the health office in all 42 cases, wish 10 deaths.

The reports were as follows :—26 cases of diphtheria with 5 deaths ; 6 cases of membranous croup with 5 deaths.

Now, as upon a previous report, I have combined the above under the one head and speak of them as one, for as regards relation to public health I think they should be so considered, and advise that the resolution adopted by this Board at their last meeting be carried out as fully as possible, and that when a case occurs in a family, whether it be termed membrane croup or diphtheria, it should be reported at once the same as diphtheria, for if perchance there is a possibility of the membrane being one other than that produced by the true diphtheritic germ, there is also a greater possibility that it is due to the true diphtheritic deposit. And since the difference is one which the microscope can alone decide. then I deem that the safest plan is to report as above suggested.

Scarlatina :—Of this disease there occurred during the year 39 cases, with no deaths. The disease has at no time been epidemic and the only month in which there was any increase in the usual number was in June, when 12 cases were reported.

Measles :—There was a mild outbreak during the months of March and April, 26 cases with 2 deaths.

Milk Supply :—The number of dairies supplying the city is thirty. These are inspected twice a year by the Sanitary Inspector. The milk is tested periodically—once a month as nearly as possible—and any dairyman's milk which does not show 3.50 of butter fat has his license suspended until such standard is again maintained, the result has been that the average standard has been considerably increased, viz., 4.00 B. F. The following is the report for October :—

MILK TEST OCTOBER, 1897.

Date.	Name of Vendor.	Source of Supply.	Temp. Cent.	Sp. Gr.	Contamer.	Butter Fat.
Oct. 1....	Witham.....	John Witham	19°	10.30 5	Can.	3.60
" 1....	Dunson Bros..	— McEwan.....	19 5°	10.30.5	"	3 60
" 1....	Bowers Bros	— Crawford.....	20°	10 30.5	"	4.25
" 1....	T. S. Spencer.....	E. L. Jones.....	18.5°	10.32	Bottled.	4.80
" 1....	C. A. Kemp.....	Wm. Mumick.....	18.5°	10 30.5	"	4.00
" 1....	Beny & Son.....	Beny & Son.....	19.5°	10.31	Can.	4.75
" 1....	Passmore.....	Passmore	18°	10.31	Bottled.	4.00
" 1....	Steadman	Steadman.....	19°	10.31	Can.	3.50
" 1....	J. Willis	J. Willis	19°	10 30	"	4.00
" 1....	R. Porteus.....	R. Porteus..	19.5°	10.31.5	"	3.50
" 1....	James Rolston.....	James Rolston.....	18.5°	10.30.5	Bottled.	4 20
" 1....	T. Beskett.	T. Beskett.....	19°	10.31	"	4.00
" 1....	Wm Nellis.....	Greenwood	19.5°	10.32	Can.	3 20
" 1....	N. Foulds.....	Bow Park	00°	10.31	Bottled.	4.00
" 1....	W. Howard.	W. Howard.....	19.5°	10.30.5	Can.	3.60
" 1....	John Cluff.....	— Agnew.....	19°	10.31.5	"	3.80
" 6....	James Lee.....	James Lee	18°	10 32	"	3.40
" 7....	Wm. Brittam.....	Wm. Brittam.....	12 5°	10.33	"	4 30
" 7....	Bowers Bros.....	Ker.....	12.5°	10.33	"	3.65
" 9....	Dundson Bros.....	W. D. Snyder.....	13.5°	10.34	"	4 20
" 9....	Hird.....	Hird.....	13.5°	10.32.5	"	5.00
" 9....	Wm. Creedmore.. .	Wm. Creedmore....	15.5°	10.31.5	"	4.00
" 9....	C. Kemp.....	C. Kemp.....	13.5°	10.31	"	4.65

The average B. F. is 4.00.

Sanitary Inspector's Report :—Besides the many special inspections arising from the reports of contagious diseases and numerous complaints there have been 500 house to house inspections during the last year.

There were 200 complaints made at the Health Office during the year, all of which were investigated and most of them satisfactorily disposed of, the nuisance being abated and in some cases fines were imposed.

One hundred and twelve wells have been ordered closed. Two hundred privy pits ordered cleaned and converted into dry earth closets or vaults.

The number of sewer connections in the city is 725, of which about one hundred have been made during the last year.

Now this brings me to the conclusion of my report, but there yet remains one thing which I wish to draw the attention of the Board to, and it is the necessity of a means of disposing of the garbage and house refuse from the decomposition, of which a great many complaints are made and from which frequently arise disease. I hope the Board will take some action in this matter and devise an efficient system for the removal of such.

(Sgd.) F. G. E. PEARSON,
Medical Health Officer.

CHATHAM.

To the Chairman and Members of the Chatham Local Board of Health :

GENTLEMEN :—I have the honor to submit for your examination my annual report for the year of 1897, commencing December 1st, 1896, and ending December 1st, 1897. There were 150 deaths reported during the year, as follows: December, 1896, 9 ; January, 1897, 10 ; February, 16 ; March, 12 ; April, 19 ; May, 8 ; June, 13 ; July, 10 ; August, 8 ; September, 10 ; October, 16 ; November, 19. Death rate 16.6 in 1,000.

Diphtheria :—One death resulted from this disease, being the only death resulting from contagious disease during the year. Thirty (30) cases were reported as follows : January, 2 ; February, 4 ; March, 2 ; May, 1 ; June, 2 ; August, 1 ; September, 4; October, 8; November, 6; total 30. Of these fifteen (15) were treated at the St. Joseph Hospital, two at the General Hospital and thirteen at their homes.

Three cases were of the laryngeal types. Diphtheria antitoxin was used in twenty-one cases, eight only requiring a second injection of the remedy. In two of the laryngeal cases three injections were given, and in one of these the injections were of two thousand (2,000 units strength. The amount and strength of the remedy being regulated by the intensity of the disease and urgency of the case, not by the age or size of the patient. The results obtained were uniformly good and apparently as certain as the results obtained from the use of morphine in quieting pain. This experience may be owing to the probable fact that the anginas which occur here accompanied by a membrane are caused by the presence of the true Klebs-Loeffler bacillus and not to the bacilli of staphylococci or streptococci, in proof of this all the cases submitted to bacteriological examination revealed the Klebs-Loeffler bacillus ; further in the laryngeal cases, the stenosis was gradual and progressive, not at all spasmodic, and the results from the use of the antitoxin were so positive and good while before its introduction the mortality was very high, even ninety per cent. When patients were unable to purchase the antitoxin it was furnished free by the city from the health office, three bottles of the remedy were furnished in this way during the year. It is a matter for regret and a cause of much unnecessary trouble and anxiety at times that we have not in the city any person whose duty it would be to examine membrane from all suspected cases of diphtheria, but hope the time will soon come when the county medical health officers will be appointed in accordance with the recommendation of Dr. P. H. Bryce, secretary of the Provincial Board of Health. The out-breaks occurred in each of nine months in the year, which is unusual here, some of the cases were easily traced to other cases outside the corporation, only three were traced to others in the city. These three deducted from twenty-one, the whole number of infected houses, leaves eighteen outbreaks of the disease. A careful study of these facts warrants the writer in saying the city is extremely fortunate in the results obtained.

Scarlet fever : – The disease was reported as follows : January 2nd, May 3rd, June 1st, September 1st, October 2nd, total nine cases. Three of these were treated at the Hospital. There were five distinct outbreaks of the disease and only in one case did any out-break spread from the original point of infection. In this disease the Isolation Hospital proved a valuable adjunct in controlling the disease where it would have been almost impossible to get perfect isolation in any other way. There were no deaths from this disease.

Isolation Hospitals :—We have two well equiped hospitals for the treatment of contagious diseases, one connected with the St. Joseph Hospital which has been in operation for several years and has done very much good, the other connected with the General Hospital has been open for patients about two months. In each of these institutions there are two large wards with all necessary apartments for nurses, equipments, etc. The good results obtained this year would not have been so good were it not for the hospitals. The Local Board of Health gave permission for them to receive patients from outside municipalities under certain conditions as to conveyance, permission, etc. In all thirty-four cases of diphtheria and two cases of scarlet fever were treated in these institutions, of these twenty were from the city and sixteen from adjoining municipalities.

Typhoid fever :—Eighty-five cases of this disease were reported as follows : January, 6, February, 3, March, 3, July, 4, August, 11, September, 17, October, 18, November, 23. Total number of infected patients, sixty-six, (66). Number of deaths 5 or 7.7 per cent. Out of these cases only six were reported to have used the city water supply exclusively and the causes assigned by attending physicians in these six cases were bad drainage and lack of sunlight, three (3). General debility one, (1). Contracted outside of the city, two, (2). The remaining seventy-nine, (79) were habitual users of well water, and although well water was not assigned as the cause by the physicians in attendance yet, it was strongly suspected in most of the cases. When we consider that seven hundred and sixty-two houses are supplied by the city water works, and one thousand and thirty-eight, (1,038) depend on well water, there seems a strong probability that well water is largely responsible for this disease. It seems evident that the city water did not cause the disease in the case of those using it though it may indirectly contribute to increasing the cases amongst those using well water. When city water is introduced into a house there must be some way of getting rid of the waste water, etc., and this is frequently done by tapping into an old box drain quite unfit for such use and after a time may pollute the ground, naturally the filtering bed of some well or wells. The natural inference from these considerations is that all suspicious wells should be closed as soon as practicable and the city water used in its place.

Sewers :—Thirteen new sewers were constructed under the provisions of the frontage by-law, making an addition to our sewerage system of eight thousand four hundred and forty-one feet.

Dairies.—Perhaps never before was Chatham supplied with so pure and good milk as at present. The dairies are all reported in very satisfactory condition. From a number of tests we learned that the milk furnished was well up to first-class standard. One dairyman had his herd of Jersey and Grade cows tested under the supervision of the office with the tuberculin test, they were all found free from tuberculosis. Four suspected cows from another herd were submitted to the test at my suggestion and proved healthy, two other cows were condemned, one on account of its emaciated condition, another because it had lump-jaw and were ordered slaughtered. Our system of licensing milk vendors makes it possible for us to lay down terms before granting a license for milk vending and an advantage to the vendor to comply with our terms.

WM. R. HALL.

GUELPH.

To the Chairman and Members of the Local Board of Health :

Gentlemen,—Herewith I have the honor to submit my report for the fiscal year ending the 31st of October, 1897 :

Mortuary Statistics :—One hundred and thirty-one deaths occurred within the limits of the city during the period, which gives (with our population of eleven thousand) a death rate per thousand of 11.9. Notwithstanding the low mortality, it should be remembered that we have within our boundaries two institutions to which the afflicted come for treatment from various distant places, many of whom are in a dying condition when they arrive. Of the whole number of deaths recorded, no less than seventeen were non-residents who belonged to this class. If we confine our report to citizens and exclude the above, our death rate falls to 10.2 per thousand, Tuberculosis accounted for 15.2 and cancerous growths for 7.6 per cent. of the total mortality. Many of the first mentioned and a large majority of the last were non-resident inmates of our hospital. Seven deaths were reported as still-born and six as due to infantile debility ; all the latter died within twenty-four hours of birth.

On the whole the sanitary condition of the city was very satisfactory indeed. There is every reason to be thankful for the marked decrease in the number of cases of diphtheria during recent years compared with those in the beginning of the decade. For illustration, in 1890 no fewer than two hundred and twenty-one cases were reported, whereas the appended table below gives only twelve for 1897, and of these not one proved fatal. Isolation, guarding places of assembly, especially the schools, and, as regards the mortality, anti-toxin were factors of great importance in bringing about the change for the better.

Scarlet fever made its appearance at various times of the year and in different parts of the city. Owing to the fact that a long time had elapsed since it had been prevalent here, circumstances were favorable for it to become an epidemic of a serious character. This was fortunately prevented by the prompt manner in which the disease in each instance was recognized and reported by our physicians.

There were only four cases of typhoid fever, and of these three contracted the disease outside the limits. The almost entire freedom from it speaks loudly in favor of the purity of our water supply.

No other form of contagious disease existed. I append a table which shows the different contagious affections that occurred, the months in which they appeared and the mortality.

—	Scarlet fever.	Deaths.	Diphtheria.	Deaths.	Typhoid fever.	Deaths.	Measles.	Deaths.	Other contagious diseases.	
November										
December										
January	4		4							
February	6	1	3							
March	1		1							
April	2				1					
May	3		1							
June	2		2							
July	1									
August					2	1				
September	2		1							
October	1				1	1				
Totals	22	1	12		4	2				

Milk Supply :—At present it is not as it should be subjected to regular inspection. Milk being the chief article of diet required by our infant population, its purity should be placed beyond doubt. Some scheme should be devised or adopted by our Board of Health to secure effective results. To be efficient it will be necessary to prevent adulteration, to insure cleanliness, to see that the cows are properly fed and to render it impossible for any tubercular or diseased animal to gain admission to the dairies.

The meat supply also requires more attention than it receives from our health authorities.

I agree with those who maintain that when the milk and meat foods are rendered free from the products of tuberculous animals, consumption will cease to be a factor in the mortuary statistics of mankind.

Time and again attention has been called to the urgent necessity that exists for a proper system of sewerage for the city. The matter is an important one in regard to the future prosperity of Guelph in more respects than those relating to sanitary matters. Persons of wealth will not voluntarily come to a place that is behind the times and where modern conveniences are not obtainable. The Eramosa road, Huskisson and other streets are drained after a fashion that would not be tolerated by any well conducted municipality.

H. HOWITT,
Medical Health Officer.

Amount of appropriation for Board for 1897	$400 00
" expended	399 13
Balance on hand	0.87

JAS. HEWARD,
Chairman.

KINGSTON.

KINGSTON, Dec. 31, 1898.

To the Chairman and Members of the Local Board of Health :

GENTLEMEN,—I beg leave to submit my annual report for the year ending 31st December, 1897 :

The total mortality of the city comprised 360 deaths. These figures include the number of deaths of persons registered as belonging to outside municipalities.

Contagious Diseases :—The number of contagious diseases reported was 115, viz.: Scarlet fever, 8; diphtheria, 84, occurring principally in the months of January, February and March ; typhoid fever,

7; membranous croup, 6; and measles, 10. Generally all cases are quarantined by being sent to the hospitals for treatment. The homes of any that are not sent to these institutions are placarded until all danger is passed, as required by the statute, and a satisfactory certificate is given by the attending physician to the effect that the patient has recovered and that the dwelling has been properly disinfected. The death record for the year is: diphtheria, 7; typhoid fever, 4; consumption, 42; whooping cough, 4.

The Work Done:—To show that the city is moving in the right direction, practically it might be stated that during the year 8,000 feet of tile sewers were constructed as against 7,200 feet in 1896. The main reason why so many barrel sewers are being constructed is because the number of house water closets is increasing very rapidly, as a result of the desire for modern improvements. The scavengers, under the system inaugurated by the Board some years ago, however, are busily engaged during the specified season in emptying closets under the supervision of the Sanitary Inspector. I have no hesitation in saying that the good health of the city is in a great measure attributable to the very thorough manner in which this work is performed. The following table shows the mork done during the year:

Cubic feet of night soil removed from privy vaults	25,000
Privy vaults inspected	2,625
" " reported clean	2,182
" " " dirty	453
Yards and premises inspected	3,540
" " " premises reported clean	3,189
" " " dirty	351
Cellars inspected	3,067
" reported clean	2,933
" " dirty or damp	134
Dead animals removed	143
Water closets reported in use	616
Dry earth closets inspected	331
Privy vaults filled up	35
" " shallowed to 2½ feet	10
Permits issued to clean privies	454

The sanitary condition of the city received the usual amount of attention, and all complaints made to the department were promptly attended to. The work of inspection was done by sanitary police, who noted carefully the condition of the premises they examined.

Concerning sewage, the city council keeps making improvements. Either tile or large stone drains with cement bottoms have been substituted for defective ones, and all sewage is carried quickly to an outlet in the harbor, which is the best means now available for disposing of it. I trust that before long funds may be forthcoming for the construction of an intercepting sewer, which would prevent all danger of the river water being polluted.

Kingston has some of as fine school buildings as are in the province. Frontenac school, built last year, has no superior in Ontario with regard to accommodation, heating and ventilation. The school boards aim to have all their buildings kept in aa good a sanitary condition as possible under the circumstances. Some of them are not all that could be desired. These, however, will receive attention just as soon as the necessary means for improving the accommodation can be conveniently provided.

The Chairman's remarks:—The chairman, Dr. Phelan, in giving his report for the year said: "Never in the history of Kingston has the health of the city been so good. While in other years contagious diseases swelled the long list, this year we have been comparatively free from them. Only a few years ago typhoid fever prevailed in so many districts of the city as to be almost epidemic, but the year just terminated has been marked by almostan immunity from the disease. This encouraging condition, I am pleased to state, was due not only to the cleanliness of the city, but also to the almost perfect state of the sewers, one mile and a half having been added this year to make the system as perfect as it is possible to make it at present. Added to this, Kingston can certainly boast of having a supply of good drinking water, which adds greatly to the health of the citizens. To cleanliness, good sewers, pure water, and the work of the ever vigilant health officer and sanitary inspector, who were always ready and willing to co-operate with the members of the Local Board of Health, may be attributed the good health which prevailed during the past year."

Very respectfully submitted,

SAMUEL H. FEE, M.D.,
Medical Health Officer.

LONDON.

London, Ont., Nov. 15th.

To the Chairman and Members Local Board of Health :

Gentlemen,—I beg to lay before you the following report for the year ending November 15th. The number of deaths during the year was 456. Two hundred and sixteen cases of infections diseases was reported, of which twenty-three proved fatal.

Classified, they were as follows : Diphtheria, 141, with twelve deaths. Typhoid fever, sixty-five, of which twelve died. Scarlet fever, twenty-two, and one death. Measles, six cases and no deaths. The Health Act requires all infectious diseases to be promptly repor ed. This has not been done in the case of measles, a large number not being reported at all. It is a popular belief that this disease is of no consequence, and that every child should have it. Of all cases mentioned, 137 were treated at the General Hospital, and twenty at St. Joseph's.

The mortality from diphtheria was very low, twelve deaths in 141 cases reported, which would seem to indicate that all these were not true diphtheria. It is very difficult, where no bacteriological examination is made of the exudate in the throat, to say in all cases what is diphtheria and what is not. At the same time it is proper, in the interest of the public health, that all suspicious cases should be reported, in order that they may be isolated and every precaution taken until a certain diagnosis can be made.

The increasing use, by medical men, of anti-toxine, no doubt has had much to do with reducing the number of deaths from this disease, and gives promise, ere long, of lowering the mortality still more. Scarlet fever was of a mild type, only one death occurring in twenty-two cases. There were nine cases of typhoid less than last year, although the deaths exceeded last year by six.

Cancer was the cause of twenty-three deaths, an increase of nine over last year. Notwithstanding, that more people come into the cities every year to avail themselves of hospital facilities, there are strong grounds for believing that this disease is increasing in Ontario. Taken by sexes, more females were attacked by infectious diseases than males. Consumption, as usual, carried off by far the largest number of people ; in fact, the mortality in this disease being equal to five or six of the others put together. Much could be done to reduce the death-rate from this cause if the public could be convinced of its infectious character, and, so far as possible, isolate all persons afflicted with the malady. The people should know that the two chief factors in spreading it are expectorating the tubercle containing the bacilli, or germs, which, if not immediately destroyed, dries, is then blown about by winds, and inhaled to start the disease afresh in healthy lungs. The other is the almost criminal folly of allowing tubercular persons to sleep with the healthy. It is in the power of every household to remove these two elements of danger.

A very satisfactory addition to the population was made during the year, which is now 36,224, an increase of 1,369 over last year. This does not include London West, which became part of the city on the 20th of December. The population, then, will not be far from forty thousand.

The death rate for the year was again low, being 12.1 for every 1,000 of the population.

Last year the city was authorized by a large majority of the ratepayers to borrow money and proceed with the construction of an enlarged system of sewerage, which was a sanitary measure of the first importance to London.

The system upon which these sewers are being constructed is the separate one, and although the initial cost is more, it is considered by all sanitary engineers to be the best. The system is in no way an experiment. It has been successfully operated in other cities and towns in the United States and Canada. These sewers are being constructed from plans made by the best engineers in the two countries. Several of the sections are now completed and it is expected the whole will be finished next year. No city in Canada will then have a better system of sewerage.

An effort was made again last year to have a plumbing by-law passed, so that an efficient plumbing inspector could be appointed by the City Council and paid by fees without putting the city to any additional expense. It was found, however, that the Council had not the power to do this. Legislation is now being obtained for the purpose, when it is hoped a competent plumbing inspector will be appointed, whose duty will be to see that no more wretched, go-as-you-please plumbing is put into dwellings.

Next to the need of an efficient system of plumbing is a public abattoir, where all animals, designed for food of man could be properly inspected before being slaughtered. This is the only

safe way, for meat unfit for food can be so nicely prepared for the market that it is almost impossible to detect it. Montreal and several other cities have public abattoirs, where qualified inspectors examine each animal before it is allowed to be slaughtered. The system is self supporting, a small fee being charged. The only cost to the municipality would be the erection of a suitable building, just outside the city limits.

There are now 155 milk vendors and 108 farms, making a total of 263 persons engaged in supplying the city with milk. Of the former, sixty-eight have no farms, but purchase what they retail from farms or country dairies. Upwards of 200 visits of inspection were made to the farms and dairies during the year, and 320 samples of milk, offered for sale, were examined. Of this number, two were found adulterated by the addition of water and six had cream added, the latter for purposes of publication. There is a steady improvement from year to year in the cleanliness and condition of the herds and dairies. This has not been accomplished without a great deal of trouble and unpleasantness. Milk enters so largely into the sustenance of infants and young children, that the importance of a pure and wholesome supply can hardly be overestimated, and the comparatively small number of deaths of infants and children in the city can be attributed to a purer supply of milk.

The provisions of the by-law restricting the sale of ice for domestic use to that obtained from the north branch above Blackfriars' bridge, have been complied with, ice taken from the cove being allowed to be sold for cooling purposes only.

During the year an unusually large number of dogs in the city showed symptoms of rabies, or in other words went mad, and several persons, mostly children, were bitten. Some of them were sent at the city's expense, to the Pasteur Institute in New York city, and some were not, those remaining at home, doing apparently as well as those sent to New York. It is quite probable that the Ontario Government will, ere long, establish in the Province a Pasteur Institute for the treatment of these cases, at much less expense than sending them to a foreign country. In England all dogs allowed out are compelled to be muzzled, which would seem to be the only way to do here.

Your Board has done wisely in adopting the new method of house disinfection, by means of formaldehyde gas, which is much more destructive to disease germs than many of the methods now in use. A suitable apparatus, designed for general apartment disinfecting can be purchased in Montreal for about $24.

The report having referred to the infectious character of consumption, Prof. Bowman suggested that some means ought to be taken to impress the public with the fact, which is not generally known. The matter will probably be brought to the attention of the Board early next year.

The members of the Board made some inquiries as to the probable cause of the increase of cancer. As the origin of the disease is not very well known, but little light resulted from the discussion.

The Board expressed satisfaction at the fact that London is in such a healthy condition, being perhaps the healthiest city on the continent. This pleasing fact is no doubt due in a measure at least to the watchful care exercised over the city's health by the Board of Health. The death rate of this year over that of last year has increased, but very slightly. Last year the percentage was 11.1, this year it was 12.1.

Respectfully submitted,

T. F. HUTCHINSON, M.D.,
Medical Health Officer.

OTTAWA.

To the Chairman and Members of the Local Board of Health:—

Gentlemen,—I beg to lay before you the annual report of the Health Department for the e ending November 31st, 1897.

In recording the fact that last year's death roll is considerably larger than that of the previous year, I merely bear evidence of the oft-repeated saying that a constantly changing temperature is not conducive to health. During the winter of 1896 and 1897, la grippe and its after effects were the principal factors of the increased mortality, which in the month of February last was almost double the usual rate from diseases of the respiratory organs, resulting largely, if not exclusively, from atmospheric influences.

The total mortality for the period comprised in this report, exclusive of still births, was 1,128. As shown on Table I., here appended. This, with our estimated population of 54,000, gives us a death rate of 20.88.

Five hundred and sixty-eight deaths out of the total mortality were of children of five years of age and under, including for the same period the mortuary records of the House of Bethlehem.

The chief factors of this large mortality among the young are pretty much always the same, the large majority succumbing to diarrhœa and other diseases incidental to dentition, especially during the summer season, and the smaller number becoming victims of such infectious diseases as diphtheria and scarlatina.

Among adults, tuberculosis in its various forms, and inflammatory diseases of the lungs and bronchial tubes, have during the past winter largely contributed to swell our death roll. It is no doubt true that a large number of the cases above named did develop from the evil effects of prevailing unhealthy atmospheric conditions last winter; but there seems to be some reason to suppose also that there has been more than a mere coincidence in the increased fatalities from pulmonary consumption during the past year; and the existence of tuberculosis among the cattle of a few dairy farms in the surrounding country supplying milk to the city. The highest figure in any previous year from this cause has been 95 deaths, whilst in the past year 125 deaths are recorded as having been caused by tuberculosis. As evidence that the hospitals for infectious diseases were kept in fairly good working order during the past year, I may state that 244 patients were received and treated there during the year, as is shown in Table II. here attached. Out of this number 31 cases were from the surrounding suburbs.

Thanks to the earnest and constant vigilance of the health authorities in the neighboring province, we have been spared a visitation of smallpox, an outbreak of which occurred there in July last. We may congratulate ourselves upon our good luck, for had our city been invaded by this loathsome disease, the accommodation in our isolation hospitals would have been found inadequate to cope with such an emergency. I deem it my duty to impress this fact upon the civic authorities, for in all likelihood we will not always be as fortunate as on the present occasion, so that they may realize the actual necessity there is to grapple with the Porter's Island problem. Then again the oft-repeated threats and onerous demands of the directorate of the Rideau street annex for infectious diseases must before long cause these authorities to squarely face this matter, and deal with it as best they can in the public interest. Whilst on this question of wants in a sanitary point of view, I wish to reiterate the fact that our city has now arrived at such proportions as to make the systematic collection of garbage an imperative necessity. The proper disposal of household refuse has been for some years past a source of much annoyance to a large portion of the community, especially during the summer season, and the sooner the authorities realize the actual necessity there is for a proper organization in this matter the better it will be for the public welfare and the credit of the city. The number of infectious diseases reported at the health office during the year are recorded in Table III. here attached.

I have still to complain of the laxity of physicians in reporting such cases as typhoid fever, measles, whooping-cough, and mumps.

The records of the House of Bethlehem for last year, as detailed in Table IV. here attached, show a very evident improvement in the percentage of lives saved as compared with previous years. This desirable result is no doubt largely due to better quarters, healthier locality and improved methods of treatment.

Last year's death rate from zymotic or so-called preventable diseases, as shown in comparative statement contained in Table V. here appended, compares favorably with that of previous years.

The ice supply of the city for household consumption is taken from the Ottawa river above the falls, and from the Gatineau river above the bridge opposite the village. The regulations of your board in relation thereto have been willingly complied with.

For all details of the work done in the sanitary department I beg to refer you the sanitary inspector's full report here appended.

In conclusion, I with pleasure acknowledge the valuable aid received from the sanitary inspector, Mr. McNeil, the two assistant inspectors, and the police force, in the discharge of the duties of this department.

Respectfully submitted,

A. ROBILLARD, M.D.

December 30th, 1897.

TABLE I.

Total mortality from all causes during the year 1897.

Diseases.	January.	February.	March.	April.	May.	June.	July.	August.	September.	October.	November.	December.	Total.
Anaemia	1	..	..	....	1	....	..	..	....	....	1	..	3
Abcess	..	..	..	2	..	....	..	1	....	....	..	..	3
Apoplexy	2	3	1	....	1	....	..	1	3	....	1	1	13
Astima	..	..	..	1	..	....	..	..	....	....	..	..	1
Alcholism	..	..	1	....	..	....	1	..	....	....	..	..	2
By cars	..	..	3	....	1	....	2	1	....	1	1	3	12
burns	..	..	..	....	..	....	..	..	1	....	..	1	2
falls	1	..	..	....	..	....	..	..	2	....	..	..	3
run over	..	..	..	....	..	....	..	..	....	....	1	..	1
drowning	4	..	..	....	..	....	1	1	1	1	1	..	9
Bronchitis	4	6	8	11	4	5	3	2	3	2	1	2	51
Biliary calculi	..	..	1	....	..	....	..	..	....	....	..	1	2
Child birth	..	..	..	1	..	....	..	1	....	....	..	..	2
Compression of brain	..	..	..	1	..	1	..	..	1	....	1	1	5
Congestion of lungs	2	3	2	4	2	1	3	..	2	3	..	2	24
Cerebritis	3	1	1	1	..	1	..	..	1	2	2	1	13
Cystitis	..	..	1	....	1	....	..	..	....	....	..	..	2
Cancer	4	..	..	4	2	2	1	..	1	3	2	4	23
Cholera nostras	..	..	..	....	..	....	..	..	1	....	..	..	1
Consumption	7	13	8	14	14	18	7	12	8	10	9	5	125
Diphtheria (including	4	4	6	4	4	2	6	3	1	2	.	2	38
Croup	1	1	..	1	1	1	..	..	1	....	1	3	10
Dropsy	..	..	1	....	..	1	1	..	....	3	..	..	6
Dysentery)	..	..	..	....	..	....	..	..	....	1	2	..	3
Diarrhœal and other diseases incidental to dentition	11	6	5	14	12	17	14	13	59	61	26	23	261
Erysipelas	1	..	1	3	..	1	1	..	....	....	2	.	9
Embolism	.	..	1	....	..	....	..	..	....	....	1	..	2
Emphysema	1	..	..	....	..	....	..	..	....	....	..	..	1
Diabetes	..	2	..	....	1	1	..	1	....	1	..	..	6
General debility, senile	1	..	1	2	4	4	1	2	3	1	..	1	20
" infantile	2	1	1	3	2	3	..	1	3	5	5	1	27
Gastro enteritis	1	..	..	1	2	2	2	7	10	3	6	..	34
Hydrocephalus	..	1	1	1	1	....	..	..	1	1	..	..	6
Hepatitis	..	..	..	3	..	1	1	1	1	1	..	1	9
Heart diseases	5	2	4	2	1	3	3	4	6	2	1	1	34
Heart failure	..	3	..	3	1	1	1	1	2	....	2	1	15
Intestinal obstruction	..	..	..	....	..	....	..	..	....	....	1	..	1
Malformation	..	..	..	....	..	....	..	..	1	....	..	..	1
Meningitis	..	2	4	4	2	2	2	1	2	2	5	3	29
Morbus Coxis	1	..	..	....	..	....	..	1	....	....	..	..	2
Myelitis	..	..	..	....	..	1	..	..	....	....	..	..	1
Insolation	..	..	..	....	..	....	..	..	3	....	..	..	3
Measles	..	..	..	....	..	1	..	1	....	....	..	..	2
Nephritis	3	.	2	6	3	1	3	1	1	2	3	3	28
Neurasthenia	1	..	..	....	..	....	..	..	....	....	1	..	2
Old age	..	2	4	5	3	3	1	2	3	1	1	2	27
Pneumonia	6	4	9	28	9	11	8	2	2	....	4	9	89
Paralysis	2	1	2	2	..	1	1	4	5	3	1	..	22
Peritonitis	..	2	1	3	..	3	2	2	....	1	1	2	17
Pleurisy	..	1	..	....	..	....	..	..	....	1	..	..	2
Premature births	3	4	8	....	4	4	2	2	....	...	2	..	29
Rheumatism	..	..	..	1	..	1	2	..	..	....	..	..	4
Scarlatina	..	1	..	....	..	2	..	1	....	....	..	..	4
Syphilis	..	..	..	....	..	....	1	..	1	....	..	..	2
Scrofula	1	1	..	....	2	....	..	..	....	....	1	..	5
Puerperal fever	..	1	1	1	1	....	..	1	....	..	..	..	5
Septicœmia	2	..	..	2	2	....	..	..	1	1	..	2	10
Spina Bifida	..	..	..	....	..	....	..	..	1	1	..	..	2
Suicide	..	..	..	....	..	....	..	..	....	....	..	1	1
Typhoid fever	1	..	2	1	..	..	..	1	1	2	6	4	18
Malignant tumors	1	..	1	....	1	1	..	..	....	1	2	..	7
Asphyxia	..	2	..	....	3	1	1	..	....	1	..	..	9
Uræmia	..	1	..	....	2	3	..	..	2	1	1	1	12
Whooping cough	..	..	..	....	..	....	..	..	....	2	2	..	4
Aneurism	..	1	..	....	..	....	..	..	....	....	..	..	1
Totals	78	70	89	130	88	102	74	71	134	123	98	81	1,128

TABLE II.

Showing the number of patients treated in the hospitals for contagious diseases, and death rate during the year ending 31st October, 1897.

Distribution.	Protestant annex.				Roman Catholic annex.			
	Diphtheria.	Scarlet fever.	Measles.	Erysipelas.	Diphtheria.	Scarlet fever.	Measles.	Erysipelas.
Number in hospital 1st November, 1896	9	3	.....	.....	8	1	.....	.....
Admitted during the year	60	32	5	1	129	16	1	.....
Discharged	55	30	5	1	112	14	1	.....
Deaths	12	.....	.....	.....	17	2	.....	.....
Remaining in hospitals	2	5	.....	.....	8	1	.....	.....

It is but just that I should state here, in connection with the above table, that out of the total number of cases there treated thirty-one were from the surrounding suburbs outside of the city limits where they had originated, and that in many instances the cases were brought to the hospital in a moribund state, there to die a few hours after their admission.

TABLE III.

Showing number of cases of infectious diseases reported at the Health Office during the year 1897.

Diseases.	No. of cases.
Scarlatina	58
Diphtheria (including croup)	116
Measles	15
Typhoid fever	119
Total	388

TABLE IV.

Record of the House of Bethlehem for the year 1897.

How disposed of.	No. of cases.
Admitted during the year	223
Placed outside or returned to parents	91
Died during the year	105
Remaining in institution on 1st November, 1897	27
Total	223

TABLE V.

Showing the death rate per thousand from zymotic diseases as compared with the total death rate from all causes in the City of Ottawa during the past eight years, as well as the present year 1897.

Year.	Population (estimated.)	Zymotic diseases.									Total zymotic.		Total all causes	
		Smallpox.	Measles.	Croup.	Scarlatina.	Diphtheria.	Typhoid fever.	Puerperal fever.	Diarrhœal diseases.	Others.	No. of deaths.	Rate per thousand.	No. of deaths.	Rate per thousand.
1889	40,000	....	13	19	5	59	18	2	188	17	321	7.40	983	22.86
1890	43,000	....	4	13	4	39	19	1	160	25	265	6.02	960	21.81
1891	44,000	....	6	14	24	30	9	3	203	21	310	6 88	908	20.17
1892	45,000	....	26	7	4	15	13	....	.....	13	68	1.46	983	21.13
1893	46,500	....	5	6	5	17	16	3	158	29	239	4.97	892	18.58
1894	48,000	....	5	41	43	78	17	1	195	33	393	7.80	1,083	21.66
1895	50,000	....	9	15	33	80	15	2	249	....	403	7.75	1,083	20.82
1896	52,000	....	1	9	8	27	21	6	208	10	290	5.77	896	17.23
1897	54,000	....	2	10	4	38	18	5	211	12	300	5.55	1,128	20.88

ANNUAL REPORT OF THE SANITARY INSPECTOR, OTTAWA, FOR THE YEAR 1897.

To the Chairman and Members of the Board of Health :

Gentlemen,—I beg to submit for your consideration my annual report showing the work done in the Sanitary Department during the year 1897.

The following tables show the work done during the past year in so far as it can be put in such form.

TABLE I.

In this table the classification of nuisances show that your officials have not waited for complaints to perform an imperative duty. A thorough system of inspection has been carried out, and the examination of yards, cesspools, privies, drains, cellars, etc., has been rigidly enforced.

TABLES II. AND III.

Show the manner in which complaints and personal inspections have been dealt with, and the locations most requiring supervision.

In addition to the work shown in tabulated form there have been :

112 disinfected.
48 houses placarded.
36 houses tested for defects in plumbing.
10 Farmsteads were visited in respect to milk supply.
10 Summonses were issued against property owners for contraventions of the Health Laws, of which nine convictions are registered.

Dumping Grounds.

The several dumping grounds have been well handled during the past year. It speaks well for the men employed at this disagreeable work that there has not been one complaint during the time specified.

Plumbing.

Another momentous question, almost solved by the trades unionists, but which nevertheless requires the serious consideration of your Board. (I have been charged in the public press with neglecting this most essential part of my statutory duties, but a careful examination of Table I, will, I think, convince your Board that I have not falled short in this respect).

Inspection of Dairies.

This important function has not been carried out systematically for some years past. Last March I visited ten farmsteads. With the exception that the proper storage of milk is not understood, the conditions were otherwise favorable.

TABLE I.

Classification of nuisances under notice of the Department during the year ending 30th October, 1897.

Description of nuisance.	By whom reported.					Total.
	Sanitarry staff.	Tenants.	Neighbors.	Owners	Others.	
Accumulation of water on streets, lots, etc	41	.....	13	.....	15	69
" of manure and other refuse	29	.....	10	2	.....	41
Cellars flooded and otherwise polluted	78	113	2	.....	9	202
Drains choked and otherwise defective	16	71	10	.....	.....	97
" box	8	3	.....	.....	.....	11
" none	27	16	3	5	.....	51
Dwellinghouses unfit for habitation	15	.....	.....	.....	.....	15
" dirty, etc	5	.....	.....	2	.....	7
" sewer gas escaping into	26	20	6	.....	.....	52
" illuminating gas escaping	1	7	.....	2	.....	10
Foul yards and premises	975	.....	294	17	100	1,386
Illuminating gas escaping on streets	3	.....	.....	.....	10	13
Privy vaults near dwellings and otherwise defective.	24	17	11	.....	.....	52
" want of	1	1	.....	.....	.....	2
Pigs kept too near dwellings	1	.....	4	1	.....	6
Sinks untrapped	4	10	.....	.....	.....	14
" want of	1	2	.....	.....	.....	8
Soil-pipes, unventilated	4	3	.....	.....	.....	10
" defective	8	16	.....	.....	3	27
Waste-pipes, defective	12	13	1	.....	1	27
Water-closets of defective construction	3	2	.....	.....	.....	5
Water-pipes burst, flooding cellars	4	4	.....	.....	.....	8
Want of water for domestic purposes	1	.....	.....	.....	.....	1
Miscellaneous	6	.....	.....	7	6	19
Total	1,296	298	354	36	144	2,128

ST. CATHARINES.

Report of the Chairman of Board of Health.

To the Mayor and Council of the Corporation of the City of St. Catharines :—

Gentlemen,—In accordance with the requirements of the Public Health Act, I herewith submit my annual report of the sanitary condition of the city for the year ending the 15th day of November, 1897.

A fatal case of scarlatina occurred in the adjoining township of Grantham, just outside the western boundary of the corporation, early in the year, the disease having been contracted in Toronto. Owing to neglect on the part of the municipal authorities of the township, the infected house was not placarded and no steps were taken to isolate its inmates.

In consequence of this, the disease was communicated to some of the residents of the city. The disease was of a virulent type and two of the four persons affected succumbed.

At the request of the Board of Health, the public and separate school trustees closed the school, and the ecclesiastical authorities discontinued the Sunday schools until all danger of contagion had passed away.

The inmates of the infected premises were carefully isolated and the premises and their contents thoroughly disinfected by the sanitary inspector. In consequence of these precautions, the "plague was stayed."

The other cases of scarlatina reported were of an exceedingly mild type. The same may be said of nearly all the cases of diphtheria.

Complaint having been made by the health authorities of the village of Port Dalhousie that the sewage of St. Catharines, which found an outlet in the old Welland canal, below lock No, 2, was injuriously affecting the sanitary condition of the residents of that village, the chairman and secretary of the Provincial Board of Health, accompanied by the chairman of the Port Dalhousie Board of Health and some of the members of our own Board, made a thorough inspection of the outlet of the Welland Avenue sewer and of the city system of drainage generally.

These gentlemen, at a special meeting of the board called to receive their report and recommendation, unanimously expressed the opinion that the health of the residents of the village of Port Dalhousie was in nowise endangered from the outfall of the sewage of the city of St. Catharines into the Welland canal.

The sewers have been flushed and disinfected under the supervision of the sanitary inspector, but have not as yet been furnished by the city with automatic flushers which will be supplied, it is to be hoped, next year.

The sanitary inspector and secretary of the Board have always been prompt and attentive in the discharge of their respective duties, and have investigated all complaints made to the Board without unnecessary delay. Their reports are herewith submitted.

On consulting the accompanying report of the secretary, it will be observed that the total number of deaths from all causes occurring in the city from the 15th of November, 1896, to the 15th of November, 1897, was 161. Deducting from this number the deaths from old age, premature birth and ac idents, twenty-eight in all, I find that the rate of mortality, calculated upon the basis of a population of 10,260, is 12.95 per 1,000 inhabitants.

The excellent sanitary condition of the city at present, leaves nothing to be desired, as it is entirely free from malarial affections and contagious diseases of an epidemic nature.

Respectfully submitted,

EDWIN GOODMAN, M. B.,
Chairman.

St. Catharines, 17th November, 1897.

To the Chairman and Local Board of Health of the City of St. Catharines:

GENTLEMEN,—Herewith I have the honor to submit the annual statement of the number of deaths in the city of St. Catharines from November 15th, 1896, to November 15th, 1897, and the causes thereof, also statement of the number of contagious diseases for the same period as per medical returns.

Deaths.

Disease.	Number.	Disease.	Number.
Shock from accident	1	Suppression of urine	1
Peritonitis	5	Heart disease	12
Consumption	13	Lung disease	2
Convulsions	3	Pneumonia	12
Nephritis	1	Calculus (vesical)	1
Abcess	1	Still born	14
Ruptured kidney	1	Lymphadenoma	1
Cardiac syncope	1	Bronchitis	5
Operation for cranial depression	1	Cardiac hypertrophy	1
Syphilis	1	Fibroid disease of womb	1
Meningitis	5	Albuminuria	1
Croup	1	Scarlet fever	2
Blood poisoning	1	Hæmorrhage	2
Diphtheria	2	Rheumatism and cystitis	1
Cancer	5	Paralysis	4
General debility	3	Influenza	3
Apoplexy	1	Burned	3
Old age	1	Brain disease	1
Not known	1	Drowned	1
Tuberculosis	4	Gangrene	2
Premature birth	2	Congestion of stomach	1
Erysipelas and puerperal insanity	1	Typhoid fever	3
Alcoholism	1	Bright's disease	2
Marasmus	3	Accident	3
Cholera infantum	3	Acute intestinal indigestion	1
Empyema	1	Progressive muscular atrophy	1
Senile decay	2	Inanition	1
Diarrhœa	1	Acute intestinal obstruction	1
Enteritis	2	Tetanus	1
Anæmia	1	Gastritis	2
Pyæmia	1	Shock following operation for pyo salpinx	1
Acute hepatitis	1	Splenic leukæmia	1
Liver disease	1		
Tumor	1	Total	161

Contagious Diseases.

Reported.	Number.	Deaths.	Number.
Scarlet fever	41	Diphtheria	2
Typhoid fever	2	Scarlet fever	2
Diphtheria	13		
Measles	3		
Total	59	Total	4

I have the honor to be,
Your obedient servant,

J. ROLLISON,
City Clerk.

St. Catharines, 17th November, 1897.

To the Chairman and Local Board of Health of the City of St. Catharines:

GENTLEMEN,—I have the honor herewith to submit my annual report (as Sanitary Inspector to your honorable body), for the year ending November 15th, 1897, and say:

That I have placarded forty-five houses during the year, in compliance with the medical returns of contagious diseases.

I have frequently visited the cow-byres, slaughter houses, livery and hotel stables, canning and other factories within the city when necessary, and have generally found them in a cleanly condition.

The city sewers have been frequently flushed during the season, and have been disinfected when necessary.

The streets, lanes and yards have received strict attention, and I am pleased to say that they have been kept clean generally.

The city scavengers have removed about 900 barrels of night soil during the year.

I have tested the milk sold by the vendors thereof, and the average registration has been 90 and 92.

I have made 1,050 house to house inspections during the year, and am pleased to say that I was kindly received by all persons in connection therewith who showed a willingness to comply with all orders and instructions in regard to sanitation.

I have made weekly visits to our City Sanitary Hospital during the year, and have pleasuee in saying that the said institution is in good order and condition, and ready for use should necessity require it at any time.

Respectfully submitted,

A. BOULDEN,
Sanitary Inspector.

St. Catharines, November 17th, 1897.

HAMILTON.

To the Chairman and Members of the Local Board of Health:

GENTLEMEN,—I beg to present my annual report for the year ending 31st October, 1897. It is pleasing to be able to make the following statements:

Burials in Hamilton Cemetery were 43 less than in the previous year, the total being 546; of this number 419 were citizens, 98 non-residents, and 29 still-born, two of the latter did not appear in the cemetery reports.

One hundred and six citizens were buried in Holy Sepulchre Cemetery, being 14 less than in last year, also 7 still-born.

Citizens of all creeds removed to other places of interment number 75, showing an increase of 10 over last year, also 2 still-born.

The total citizen mortality was 600—males 320 and females 260; this shows a decrease of 55 deaths compared with the mortality of 1896.

If we take the population at 50,000, which has been done for the last two or three years, the rate of mortality per 1,000 will be 12. Taking the assessors' figures at 50,600 it will be about 11.85 per 1,000.

Nine citizens died while absent from the city; 20 deaths were reported as due to accident, 3 of which occurred to non-residents, and 5 cases were reported as suicides.

Deaths of chidren under one year of age were somewhat less, being 124, and due to the usual causes; 2 cases, however, were from accidental smothering.

Deaths under 5 years were as follows:

Under 1 year	124
Between 1 and 2	26
" 2 and 3	8
" 3 and 4	6
" 4 and 5	10
Total	174

Citizens were reported as having died at the following institutions, viz.:

House of Refuge	8
City Hospital	63
(4 of which were reported from the House of Refuge.)	
Aged Women's Home	1
Home of the Friendless	9
Jail	1
St. Joseph's Hospital	11

Twelve non-residents died in the city.

Seven hundred and thirty-four cases of contagious diseases were registered at the health office, of these 62 were cases of diphtheria (1 more than last year), 203 cases of scarlet fever, mostly of a mild type, this shows an increase of 156 over last report ; typhoid fever cases number 41, being 78 less than last year.

The other contagious diseases are generally inaccurate in numbers, owing to many of them being of so mild a type as not to require a physician's aid. I think, however, that it would be advisable in every case to have diseases diagnosed by a physician. These cases not reported undoubtedly spread disease. The cases reported were :

Measles	24
Chickenpox	105
Mumps	252
Whooping-cough	47

The totals show a decrease of 303 cases, compared with last year's report.

Deaths from diphtheria number 14, being 5 more than in 1896. One might expect to have a decrease in mortality from this disease owing to the wonderful influence anti-toxine is said to have over it.

There were four deaths from scarlet fever, and five from typhoid fever.

Respectfully submitted,

(Signed) I. RYALL,
Medical Health Officer.

P.S.—Report of work done is shown in Sanitary Inspector Peacock's report.

City Hall, November 1st, 1897.

To Dr. Ryall,
Medical Health Officer.

Sir,—Please find below synopsis of work done by your three inspectors collectively for the year commencing November 1st, 1896, and ending October 31st, 1897.

Yours respectfully,

(Signed) J. PEACOCK,
Sanitary Inspector.

Number of inspections made		13,351
"	privy vaults notified to be cleaned	1,709
"	" permits granted for new ones	84
"	" cleaned out by contractors	1,828
"	" abolished	67
"	cesspools notified to be cleaned	8
"	" cleaned out by contractors	20
"	dry earth closets notified to be cleaned	29
"	sewer connections notified to be made	10
"	" found defective and notified	139
"	foul drains notified to abolish	34
"	stagnant water "	27

Number of old wells to fill in	11
" houses placarded for infectious diseases	205
" " fumigated after infection	204
" complaints made at office and not well founded	42

Scavenger work done by the four contractors for the removal of garbage and refuse, including ashes, from each house in the city weekly to the various dumps was—

Number of full loads collected and delivered at dumps 6,926

Burnt at Crematory—

Number of dogs	87
" cats	104
" fowl	61
" lots of fish and meat	6
" rabbits	22
" loads of rags, etc., from the hospital	51

Number of dogs, cats, etc., buried by Mr. McBride, 209.

Yours respectfully,
(Signed) J. PEACOCK,
Inspector.

The markets have been regularly inspected by your inspector who reports that the quality of the meats offered for sale have been fully up to the average. Some very fine samples of fruit have been on sale, but of the finer kinds a great quantity of those offered have been culls or seconds. The larger fruit growers presumably finding a better market for their first quality. Apples generally are of poor quality.

Yours respectfully,

J. PEACOCK,
Inspector.

This report is the aggregate of each monthly statement reported at monthly meetings of the Board of Health.

(Signed) I. RYALL.

ST. THOMAS.

County of Elgin, Ont.

To the Chairman and Members of the Local Board of Health :

I beg leave to lay before you the report of our sanitary condition from the 30th of November, 1896, till the 30th of November, 1897, showing the number of contagious diseases and the death rate as follows :

Diphtheria, about 100 cases, with a mortality of (15) fifteen.

Scarlet fever, 10 cases and no deaths.

Measels, 3 cases and no deaths,

Consumption, 10 deaths. As we do not placard consumption we are not aware of the number of cases in the city. Typhoid fever, 1 case and no deaths. All other non-contagious diseases, still-born, etc., making a total death rate of 160, or 14.5 per 1,000 in a population of over 11,000.

The city is now in a healthy condition. The sanitary work of cleaning privies, back yards, alleyways, cellars, and street sweeping have been attended to satisfactorily from the time the frost disappeared to the present. It has not been made compulsory to establish dry or water-closets instead of the privy pit system ; but as we have at present sixteen and one-half (16½) miles of sewers in fairly good working order, we expect soon to be able to report that every street has been sewered. We will then gradually require persons residing in the populous part of the city to put in sewer connections.

Our system of sewers is so arranged that all mains and branches convey the sewage into a common trunk, thus enabling, when necessary, to establish a sewer farm, to be used at least during the season of drought, or to adopt some chemical system of deodorizing and disinfecting.

Our streets are fast becoming macadamized on sodded boulevards, so that no water will be allowed to remain on the surface, causing noisome ponds.

We have at present a system of waterworks that is more than self-sustaining. Formerly wells were used, but owing to the nature of the soil, and an impervious claybed rising to within six or eight feet of the surface (composed of gravel, sand and mould), through which the surface water and water from the privy pits percolated and settled on the bed of clay, which soon caused the well water to become polluted and impure; and also caused frequent epidemics of typhoid fever. The wells are being gradually filled up, so that at the present time we have 2,078 water services put in and a great number more ordered as soon as the frost is out of the ground. The use of pure water and the cleanly condition of the city will account for the almost entire disappearance of typhoid fever.

WM. C. VANBUSKIRK,
Medical Health Officer.

STRATFORD.

Number of Deaths and Causes.

To the Chairman and Members of the Local Board of Health:

Gentlemen,—I have again the privilege of submitting to you the annual report of the health department of the city for the year ending October 31st, 1897. In order to judge of our sanitary standing, it may be well to contrast our death rate with that of the previous year, and also with that of other cities and the number of their contagious diseases as compared with ours. Last year the deaths were 75, and the rate was 7.14 per thousand. This year the number of deaths was 80, and the death rate per thousand 7.61, a fraction over the previous year. To this number Shakespeare ward contributed 23 deaths, Romeo ward 26, Avon ward 17, Falstaff ward 10, Hamlet ward 3, and one not placed. Of this number we find that 14 died under 1 year old. 4 between 1 and 5, 1 between 5 and 10, 2 between 10 and 15, 3 between 15 and 20, 3 between 20 and 30, 3 between 30 and 40, 11 between 40 and 50, 11 between 50 and 60, 13 between 60 and 70, 10 between 70 and 80, and 3 between 80 and 90, and 2 age not given. In looking into the cause of death we find that the deaths from consumption were 7; from cancers, 6; from diphtheria, 2; accident, 5; heart failure, 4; pneumonia, 6; blood poisoning, 2; hemorrhage, 1; anemia, 2; suicide, 1, Bright's disease, 1; old age, 7; convulsions, 2; croup, 1; liver complaint, 1; apoplexy, 3; gangrene, 2; peritonitis, 1; apendicitis, 1; tubercular growth, 1; enteritis, 1; water on brain, 1; operation 1; paralysis, 5; meningitis, 1; rheumatic fever, 1; found dead, 1; no cause given, 8; typhoid fever, 1; cholera infantum, 3; inflammatory rheumatism, 1; dropsy, 1.

"In the gaol 2 deaths occurred, in the house of refuge, 5, and 1 no place given. These were not included in the estimates.

'During the year there have been reported 17 cases of typhoid fever with 1 death therefrom. Last year there were 33 cases with 3 deaths. Immediately on receiving a report of the occurrence of this disease an investigation was made by the sanitary inspector as to the cause.

"The water and milk supplies were specially investigated. Of the 17 cases we find that 15 were using well water and 2 city water; one of these contracted the disease from home. There are at present 202 families using the city water. In addition to typhoid fever of the so-called preventable diseases, we find that we have had 21 cases of diphtheria, with 2 deaths, as compared with 2 cases the year previous with no deaths. Scarlet fever, we have had 15 cases with no deaths. Last year 45 cases with 1 death. No deaths from whooping cough or measles, a remarkable occurrence.

"Contrasting our contagious diseases with that of other cities, we find that Brantford had last year 61 cases of diphtheria, 9 of scarlet fever and 22 of measles—death rate 15.85. Chatham had 16 cases of diphtheria, none of scarlet fever—death rate 12.4. Hamilton had 61 cases of diphtheria with 9 deaths, 47 cases of scarlet fever, 119 cases of typhoid with 5 deaths, 509 cases of measles, and 205 of whooping cough—death rate 13.1. London had 64 cases of typhoid fever with 4 deaths, 22 cases of diphtheria with 6 deaths, scarlet fever 9 cases, 1 death—death

rate a fraction over 10. St. Catharines, 8 cases scarlet fever, 7 cases of typhoid, 2 deaths, diphtheria, 19 cases with 2 deaths, and 89 cases of measles—death rate 13.7. Windsor, 10 cases of diphtheria with 2 deaths, scarlet fever, 23 cases, 8 deaths, typhoid fever, 12 cases. Stratford's death rate being 7.14.

"We find from this contrast that our death rate is much lower than that of any other city for which we feel thankful. We have also reason to congratulate ourselves on our immunity from that much dreaded disease diphtheria. During September last, three families were affected, each irrespective of the other, purely sporadic in character, yet not a little excitement, needless however, seems to have arisen in connection therewith. The development of these cases has given rise to the suggestion, regarding the advisability of having stringent rules printed and posted on the affected houses, governing the conduct of the inmates as to their mingling or having communication with the general public. This I consider would not be judicious or advisable. Diphtheria is no respector of households. It enters the home of the rich as well as the poor, and takes possession of the mansion as well as of the humblest cabin. The same rules could not be adopted in all cases.

"In the discussion on the last report given you on the sanitary condition of the city so far as related to contagious diseases, I find that certain aldermen were laboring under a wrong impression of what is meant by isolation. A few words explanatory thereof, may not be out of place, as it may tend to set aright certain discrepancies which seem to exist: Isolation from a medical standpoint, as well as from any other, means that when a patient is isolated, he is placed in a detached position, separated from others, not afflicted, or placed alone. For example, when a medical man is called to see a patient which he finds to be suffering from any contagious disease, he at once looks into the domestic surroundings, and in the best practical manner, compatible with the welfare of his patient, has him removed to a room as remote as possible from the other members of the household. The room being cleared of carpets, curtains, pictures and other needless furniture, a sheet saturated with some disinfecting solution is hung over the door, and as little ingress and egress as possible allowed between the sick room and the rest of the house. This is what is meant by isolation.

"Unfortunately, however, cases occur in dwellings where this cannot be rigidly enforced, as in many instances there are only three or four rooms in the house and as many or more children, so that nothing is left for the physician but to do the best he can in having as strict cleanliness as possible.

"We always endeavor, when possible and safe, to allow the wage earner to continue his work, the business man to follow his business, but when isolation cannot be successfully carried out, the unfortunate householder must either remain at home or remove to another place until all danger of contagion ceases.

"Isolation differs from quarantine in as much as the latter embodies all the sanitary rules of the former as also the interdicting, prohibiting or restraining of any member of the affected house or place for as long a time as the disease is considered to continue contagious, of all communication with the outside world. Such a proceeding would involve the necessity of employing two officers, one for day and the other for night, to guard the house, which even with our limited number of cases, would incur considerable expense during the year. Fortunately, however, such extreme measures are not considered necessary unless an epidemic be threatened. The rules to govern each individual case must be left to the discretion of the attending physician or to the direction of your Board.

"Notwithstanding the comparative immunity our city enjoys from epidemic and endemic diseases, one or two circumstances have occurred during the year which show most exclusively that an isolation hospital would be a most desirable institution in our midst. In two previous reports, I strongly urged the necessity of having such a place provided, and would so urge again in the light of the statements made by Ald. Vanstone, chairman of the Board of Health, as to the difficulty of enforcing the regulations at present in operation regarding the isolation of patients and the residences in which epidemic diseases exist. Such a hospital would provide a place where patients could be properly isolated and treated under the best possible circumstances. The houses from which the patients have been removed could then be disinfected at once and the quarantine which otherwise would have existed would be unnecessary. The cost of erecting and maintaining such a hospital, together with the proper disinfecting chamber, convalescent room, etc., would not be very heavy, while its usefulness would be very considerable.

"The appointment of Mr. W. F. VanBuskirk as city engineer is a step in the right direction. The carrying out under the superintendence of one engineer of all sewer and other schemes having for their object the improvement of the sanitary condition of the city has everything to recommend it. The assistance and advice which such an officer will give to myself and your sanitary inspector in suggesting remedies for unsanitary conditions will be of the greatest possible value.

"In my last annual report, I was able to suggest that considerable attention was being given to sewage matters; that the initial steps toward the introduction of system of sewerage were being taken, and that the trunk sewer had been completed from the outlet to Nile street. During the present season a great deal of progress has been made with the work in various parts of the city. Operations were commenced on the trunk sewer across the river, but owing to the height of the water it had to be abondoned, and on account of the press of work in other parts of the city has not been resumed. In addition to the laying of the trunk sewer on Rebecca St., Front and Brunswick streets to Queen, there have been completed sewers on Erie St., on Wellington, Market and Ontario streets to Waterloo St., and Downie St., and the work is in progress on sewers on Shrewsbury St. This shows that the committee have been pushing forward the work of laying the sewers throughout the city.

"The manholes and flushing tanks in connection with those various sewers are all completed, and will be found of great service. The provision of proper means of flushing sewers is most essential, and the importance of flushing the sewers thoroughly and frequently, automatically or otherwise, cannot be too strictly insisted upon.

"The sewer committee, I am glad to notice, have in preparation a by-law governing the use of sewers, and the putting in of house drains. The house drains are much more likely to get into bad condition than the public sewers, and unless put in by competent workmen under the direction of the engineer, are almost certain to cause trouble.

"I cannot too strongly impress upon the Board the necessity of compelling property owners to connect all drains carrying foul water into the sewers when built. An experience some years ago shows that unless there is authority to compel owners to make use of sewers, the connections will not be made. After the completion of the sewers on Hibernia St., Vincent and Huron streets, it was found that a number of cases of typhoid fever occurred in the vicinity with considerable loss of life. The cause seemed to be lack of flushing, want of ventilation at distal end, and also that few connections had been made, and sewers were practically worse than useless. Improperly flushed sewers are infinitely worse than none at all.

"It is certainly a great pleasure to observe that the citizens and members of the council apart from the members of your committee, are becoming more and more alive to the importance of the work being done by you. No committee under the supervision of the mayor can at all compare in resposibility to yours. Yours deals with the consideration of adopting the best means within your power, for preserving the public health and saving human life; others with financial measures, protection and public convenience.

"I hope that any suggestion or measure recommended by you for the protection of the public health, in your annual report to the council, will not receive that indifference and inattertion of former years, but will receive such consideration and action thereon as its importance deserves.

"In conclusion I may say that the usual amount of sanitary work has been done by the inspector, and everything is progressing harmoniously and favorably."

Respectfully submitted,

J. H. ROBERTSON, M.D.,
Medical Health Officer.

WINDSOR.

Report of the Medical Health Officer.

To the Chairman and Members of the Local Board of Health:

I now submit my report on the sanitary condition of Windsor for the past year.

The records received by me have been carefully perused and show the following statistics:

The population of the City of Windsor is 11,915. The mortality from December 1st, 1896, to December 1st, 1897, has been 152, including eighteen non-residents and seven still born.

The death rate of the year ending November 30th, 1897, is 11.25 per thousand, being lower than that of last year. Of contagious diseases there were as follows:

Diphtheria and diphtheritic croup	26 cases and	5 deaths.
Scarlet fever	10 " "	no "

Phthisis	12	deaths.
Typhoid fever	1	"
Whooping cough	2	"
Under 2 weeks old	7	"
" 5 years "	31	"
Over 70 " "	27	"

One hundred and sixty-two houses which were in a bad sanitary condition in regard to drainage and plumbing have been remedied, and new houses which are being erected are strictly supervised.

A new intake pipe has been put in whose diameter is thirty inches, extending out into the Detroit River 840 feet, which is beyond the centre of the channel, forty-seven feet below the surface of the water and ten feet from the bottom of the river. It branches off and empties into two wells with a capacity 8,000 gallons each. The old intake pipe was extended out last year 200 feet, which is beyond the centre of the channel. Formerly it only went to the channel bank. It empties into a well with a capacity of 12,000 gallons. The wells can be cleaned out without stopping the supply of water.

There is no house placarded at the present time for contagious disease.

Our supply of milk has been highly satisfactory, the average per cent. of butter fat on June 28th and June 29th, when I tested fifty-one samples, being above standard, only six being below. The test of sixty samples made on October 11th and 12th was better still, only four being below standard.

On August 2nd and 3rd I visited twenty-eight byres containing in all 204 cows producing 566 gallons of milk. Our milkmen see the necessity of giving good feed to their cattle, also wholesome water, and keeping their surroundings in a healthy state.

Windsor has made considerable improvement in regard to the purity of the water supply, and I now think we can compare with any city or town in Ontario.

Respectfully submitted,

ROBERT LAMBERT,
Medical Health Officer.

Memo.—The foregoing was adopted by the Board of Health December 1st 1897, and by the City Council December 27th, 1897.

APPENDIX.

ANNUAL REPORTS OF CITIES, TOWNS, VILLAGES AND TOWNSHIPS WITH TABULAR REPORTS OF SPECIAL SANITARY CONDITIONS.

CITIES.

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it reported at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Belleville	R. Tracey, M.D.; D. B. Robertson, Secretary.	Yes; yes.	Scarlatina, 5 cases; diphtheria, 15 cases, 3 deaths; typhoid, 23 cases, 8 deaths; tuberculosis, 9 deaths.
Brantford ...	F. G. E. Pearson, M.D.; H. F. Leonard, Secretary.	Yes	Scarlatina, 39 cases; diphtheria, 36 cases, 5 deaths; typhoid, 31 cases, 7 deaths.
Chatham	W. R Hall, M.D.; W. G. Merritt, Secretary.	.. ..	Scarlatina, 9 cases; diphtheria, 30 cases, 1 death; typhoid, 85 cases, 5 deaths.
Guelph.	H. Howett, M. D.; R. Mitchell, Secretary.	Yes; once a year and when complaints are made.	Scarlatina, 22 cases, 1 death; diphtheria, 12 cases, typhoid, 4 cases, 2 deaths; tuberculosis, 20 deaths, of whom a large portion were sent to hospital from outside places.
Hamilton	I. Ryall, M.D.; Thomas Beasley, Secretary.	Yes; yearly and when complaints are made.	Scarlatina, 203 cases, 4 deaths; diphtheria, 62 cases, 14 deaths; typhoid, 41 cases, 5 deaths.
Kingston.....	Samuel H. Fee, M.D.; Wm. M. Drennan, Secretary.	Yes; in the spring time and all complaints are examined into.	Scarlatina, 7 cases; diphtheria, 56 cases; typhoid, 7 cases; tuberculosis, 40 cases.
London	T. V. Hutchinson, M.D.; Jas. F. Bell, Secretary.	Yes	Diphtheria, 141 cases, 12 deaths; typhoid, 65 cases, 12 deaths; scarlet fever, 22 cases, 1 death.
Ottawa.	A. Robillard, M.D.; John Henderson, Secretary.	General sanitary inspection once a year.	Scarlatina, 55 cases, 4 deaths diphtheria, 116 cases, 48 deaths; typhoid, 199 cases, 18 deaths; Tuberculosis, 125 deaths.

CITIES.

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results in treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Yes; placarding and isolated at hospital.	Yes used in 6 cases	Yes.....	Yes; no ....
Yes; by isolation and placarding.	Yes; results good	Most cases are under the direction of sanitary inspector; disinfectants supplied by M.H.O.	Yes .....
....	Anti-toxine used successfully.		
Yes; patients isolated at home or sent to isolation hospital.	Yes; results excellent ..	Yes	Schools inspected when considered advisable; certificates of vaccination from all new pupils.
Some cases are sent to isolation hospital and other cases are isolated at home.	Cannot say to what extent it has been used; have no faith in it.	Yes; generally	No. .....
Yes; with few exceptions, all patients are sent to isolation hospital.	Yes; results very satisfactory.	No; enquiry is made in each case by officer of board to ascertain if disinfection has been carried out.	No; occasionally inspections are made.
The increasing use by medical men of anti-toxine has had much to do with reducing the number of deaths from diphtheria.			
Yes; into hospital for that purpose.	Yes; results as a rule very satisfactory.	Yes	No; no .....

CITIES.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughterhouses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Belleville	Yes	Wells and water from city waterworks.	No: no	None
Brantford	Yes	Waterworks; ¾; Wells, ¼; depth 12 to 60 ft.	Yes, twice a year: no tuberculosis has occurred.	None
Guelph	Yes	Generally from waterworks.	Not as yet, but one is proposed.	Four or five; no licenses, but frequently inspected; offal used as manure; no regular inspection of carcasses
Hamilton	Physicians are supplied.	Lake Ontario	Cow byres are inspected monthly; tuberculine has been used by one milk dealer as far as is known; three animals responded to the test, and I learn were put to fatten for the butchers.	Two; offal is removed to fertilizing works; no systematic examination of carcasses by health department.
Kingston	Yes	Waterworks	Yes; no; no	Two; regulation carried out; no licenses; offal is removed from premise after killing; no.
Ottawa	Yes	Ottawa river	Inspection made occasionally; tuberculosis has been found in several instances; tuberculine test is applied to every herd in the city.	None; offal disposed of in the country; no systematic inspection of carcasses by officers of board.

CITIES.—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
Yes; removed by scavangers.	Yes	One hide and tallow rendering factory.	
Night soil is removed by contract; no garbage system as yet.	Yes; 725 connections...	Soap factory, varnish works and tannery.	Yes, and in some cases fines imposed.
Yes; $1.50 per cubic yard.	No	....	No.
Yes; charge for removal of night soil, $2.50 for two cubic yards. scavengers at $4.50 per diem.	Yes; probably 60 to 70 per cent. of houses	Fertilizing works when dead animals; bones and blood, refuse from pork factories are converted into fertilizers, also soap boiling factories.	No.
Yes; removing garbage 10c per bbl. of 24 gal; night soil, 50c per bbl. of 40 gal for dry earth closets; privy pits, $2.50 per cubic yard.	Yes; 75 per cent	Storing hides, 4; tallow-melting, 1; slaughtering animals, 6; manufacturing gas, 1.	One case.
Garbage removed by carts and cost paid by parties requiring it done; night soil is removed by contract at cost of occupant.	Yes; about one-third of the houses are connected.	Two hide storage houses; 1 soap boiling; 1 gas mfg.; 2 licensed junk stores.	Ten prosecutions for violations of health regulations; 9 convictions.

CITIES —*Concluded.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
St. Catharines..	No M. H. O.; J. Rollinson, Secretary.	General sanitary inspection twice a year.	Scarlatina, 41 cases, 2 deaths; diphtheria, 13 cases, 2 deaths; typhoid, 2 cases, 2 deaths; tuberculosis, 17 cases. 17 deaths.
St. Thomas.....	W. C. Van Buskirk, M.D.; W. B. Doherty, Secretary.	Yes; complaints are attended to when made.	Scarlatina, 10 cases; diphtheria, 88 cases, 15 deaths; typhoid, 1 case; tuberculosis, none.
Stratford.....	J. S. Robertson, M.D.; R. R. Lang, Secretary.	Yes; yes.....	Scarlatina, 15 cases; diphtheria, 21 cases, 2 deaths; typhoid, 17 cases, 1 death; tuberculosis, 7 deaths.
Toronto.....	Chas. Sheard, M.D.; John Blevins, Secretary.	General house to house inspection once a year and inspection when complaints are made.	Small pox, 2 cases, no deaths; scarlatina, 1,594 cases, 63 deaths; diphtheria, 741 cases, 156 deaths; typhoid, 198 cases, 24 deaths.
Windsor	R. Lambert, M.D.; Stephen Lusted, Secretary.	General inspection.....	Diphtheria and diphtheritic croup 26 cases, 5 deaths; scarlet fever 10 cases; typhoid, 1 death.

CITIES.—*Concluded.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results in treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school-children each year?
Yes; by placarding houses and removal to isolation hospital if necessary.	Anti-toxine has been used in a few cases successfully.	Yes; by sanitary inspector.	Compulsory vaccination if considered necessary.
Yes; infected houses quarantined 21 days.	Yes	Yes	No; no
By placarding houses; no isolation hospital.	Yes; large percentage favorable.	Yes	Yes; yes
Yes; quarantine of infected inmates of houses where contagious diseases have been; daily visitation of quarantine officers and patrolling of all funerals where death is from contagious diseases.	No	Yes	Yes
Yes	Don't know	Yes	Yes

CITIES —*Concluded.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughterhouses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcases by any officer of the Board?
St. Catharines..	To teachers	Waterworks....	Monthly inspection of dairy cows ; no cases of tuberculosis.	Three ; no license ; market inspector inspects all meat offered for sale.
St. Thomas.....	To teachers	....	No.....	One, a pork-packing establishment ; offal is removed to outside of municipality ; no systematic inspection of carcasses.
Stratford.....	Yes.....	Wells, about 20 feet.....	Yes ; none occurred.	Two on outskirts of city; no license.
Toronto.....	Yes	City water supply from lake Ontario.	Yes; no systematic test.	Thirty-five ; offal and blood removed daily to places outside the city.
Windsor	No ; to physicians only.	Detroit river.....	Yes ; tuberculosis unknown.	None ....

CITIES.—*Concluded.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewer.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during year under Public Health Act? State in detail the nature of the case, and results of same.
Yes; 25c per bbl.....	Yes; proportions of connections, 9 to 100.	Tanneries, 3; soap factory, 1; hide storage, 1.	No.
Removed by private parties.	Yes....	.....	Yes; 5 cases, two for keeping premises in a filthy state, both allowed to go on promise to clean up; three for violations of diphtheria regulations.
Of night soil, so much per cubic yard (about $2.50); no systematic removal of garbage in vogue,	Yes; but not yet complete.	None	No.
Yes; garbage removed twice a week; night soil by private contractors.	Yes..	....	Fifteen parties fined $77; of fences, throwing refuse on vacant lot, selling impure fruit (bananas), breach of ice regulations, breach of quarantine regulations (scarlet fever), breach of the Public Health Act (failure to report C. T.) breach of plumbing by-law.
Hotel garbage removed every other day by persons who use the garbage and don't charge for collecting it; night soil removed by private (licensed) parties in air-tight vessels.	A brick sewer in almost every street.	None	Some informations laid but no convictions made.

TOWNS.

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisances is made to Board.	Contagious diseases.
Alliston	J. J. Harper, M. D.; W. M. Lockhart, Secretary.	Yes; yes	Tuberculosis; several deaths
Almonte	No M. H. O.; L. Coulter, Secretary.	Yes; one general inspection.	Scarlatina, 3 cases, diphtheria, 5 cases, 1 death; typhoid, 9 cases, 1 death.
Arnprior	No M. H. O.; Geo. E. Nelson, Secretary.	Yes; inspection made during the month of May, and afterwards as called upon.	Scarlatina, 20 cases, 2 deaths; diphtheria, 7 cases, tuberculosis, 10 cases, 10 deaths.
Aurora	No M. H. O.; S. H. Lundy, Secretary.		Scarlatina, 1 case, 1 death; diphtheria, 1 case, typhoid, 2 cases.
Amherstburg	T. Hobley, M.D.; J. H. Leggatt, Secretary.	General inspection	
Ailsa Craig	John Gunn, M. D.; E. B. Smith, Secretary.	Yes; yearly and on complaint.	None
Barrie	L. Oliver, M.D.; Henry Bird, Secretary.	Yes; action taken on complaint.	Scarlatina, 5 cases, 1 death; typhoid, 3 cases.
Bowmanville	A. S. Tilley, M.D.; R. Windatt, Secretary.	A general inspection made in the spring, and when complaints are made.	Scarlatina, 12 cases, diphtheria, 2 cases, typhoid, 6 cases, tuberculosis, 20 cases, 2 deaths.
Brockville	Harry E. Vaux, M.D.; Geo. A. McMullan, Secretary.	Yes; yes; yes.	Scarlatina, 135 cases, 2 deaths; diphtheria, 17 cases, 4 deaths; typhoid, 35 cases, 4 deaths; tuberculosis, 13 deaths.
Berlin	H. G. Lackner, M.D.; H. Aletter, Secretary.	General sanitary inspection	Scarlatina, 11 cases, diphtheria, 153 cases, 9 deaths.

TOWNS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State meth ds adopted and whether any isolation hospital exists?	Is Diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the board.	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
No hospital; every case is looked after by attending physician.	Yes; is kept in readiness for use; none treated in past 12 months.	Yes, when necessary....	No; no ....
No hospital, but houses infected placarded and isolated.	Yes; no deaths when used.	Physicians in attendance attend to disinfection.	No; no .....
Yes; dwelling placarded..	Think so	Yes, under instructions of attending physician.	No; no ....
Yes; by placarding	No	Yes	No; no ....
[illegible]	[illegible]	[illegible]	[illegible]
No	No	No	No ....
Isolated as completely as possible; no hospital.	Think not; some physicians do not use it.	Yes.....	No .. ..? ....
Yes; isolated in room, and inmates to the house.	No	No	No; no ....
Yes; the usual remedies, as instructed by the medical attendants.	Yes; fairly satisfactory.	No; under the supervision of attending physician.	Yes; no .....
Isolate contagious diseases as much as possible at home; no hospital.	Not in common use; as far as used results satisfactory.	Yes	Yes; no..... .....

TOWNS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Alliston	No	We have waterworks, but not for domestic use; supply obtained from wells varying from 14 to 30 feet.	No; no	Two; yes; bones boiled, other organic matter regularly removed.
Almonte	No		No; 1 case of tuberculosis in town; animal destroyed; cannot say that the test is used.	Two; not licensed but inspected.
Arnprior	Yes	Wells, 18 to 20 feet	No; none; tuberculine test in one herd, no disease found.	None
Aurora	No	Waterworks	No	One; no
Amherstburg				
Ailsa Craig	Yes	Wells, 3 to 20 feet	No	None
Barrie		Artesian wells	No; stables have been inspected; no tuberculosis; no test.	Two; not licensed; inspected.
Bowmanville		Wells, about 20 feet	No dairies	Two; no license; no.
Brockville	Yes	River St. Lawrence; a few wells still in use.	Yes; sanitary inspector makes a systematic inspection of all cow byres; no cases of tuberculosis reported.	None allowed within municipality.
Berlin	Yes	Waterworks and wells	No; several animals have been tested.	Seven; licensed; yes.

TOWNS.—*Continued.*

Is there systematic removal of garbage, and night soil? If so on what basis of cost is the removal made? How is cost calculated?	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No; privately attended to.	On the main street only.	Two tanneries; regularly inspected.	None.
Dumping ground provided about a mile outside of town; ground taken care of by the owner, for which the Board of Health pays a yearly sum; removals made by carters at the expense of each individual.	No	None	.....
No	No	None	No.
None	None	.....	No.
.....	.....	None	No.
Yes; at 45c per vault; Board supplies disinfectants and charge owners 50c. per vault.	No	None	No.
Yes; 30c. per month paid by householders having garbage pits and dry earth closets to scavengers having contracts.	Yes; about 30 per cent.	.....	No.
No; left largely to discretion of parties themselves.	No	None	No.
Yes; on the main st	Yes	One storehouse for hides.	No.
Yes	Yes; 1 to 15	Three storing of hides.	One prosecution.

TOWNS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Brampton	J. T. Mullin, M.D.; T. L. Blain, Secretary.	Yes	Scarlatina, 1 case, 1 death; diphtheria, 2 cases, 1 death; tuberculosis, 3 cases, 3 deaths.
Clinton	J. W. Shaw, M. D.; Wm. Coats, Secretary.	General inspection every spring and afterwards when attention is called.	Typhoid, 2 cases, tuberculosis, 5 cases, 5 deaths.
Cobourg	E. C. McNicholl, M. D.; D. H. Minaker, Secretary.	Yes; and when complaints are made.	Scarlatina, 8 cases, diphtheria, 7 cases, 1 death; typhoid, 12 cases, 1 death; tuberculosis, 6 cases, 4 deaths.
Cornwall	Chas. J. Hamilton, M.D.; Geo. S. Jarvis, Secretary.	Yes; yes	
Collingwood	A. R Stephen, M. D.; John Hogg, Secretary.	Yes; at intervals	Scarlatina, 30 cases, 1 death; diphtheria, 6 cases, 3 deaths; typhoid, 6 cases, 3 deaths; tuberculosis, 7 deaths.
Dundas	Thos. A. Pertram, M.D.; Jas. More, Secretary.	Yearly; also when complaint is made.	Typhoid, 3 cases, 1 death; tuberculosis, 6 cases, 6 deaths.
Essex	J. W. Brien, M.D; John Walters, Secretary.	Yes; reported at intervals.	Scarlatina, 5 cases; diphtheria, 2 cases; typhoid, 10 cases; tuberculosis, 2 cases, 2 deaths.
Forest	Walter Boyd, M.D.; W. G. Owens, Secretary.	Yes	Scarlatina, 1 case
Fort William	T. S. T. Smellie, M.D.; E. S. Rutledge, Secretary.	Annual inspection	Diphtheria, 7 cases, 2 deaths tuberculosis, 3 cases, 2 deaths.
Galt	J. S. Wardlaw, M.D.; J. M. Hood, Secretary.	Yes; yes	Scarlatina, 4 cases; diphtheria, 58 cases; typhoid, 72 cases.
Gananoque	J. A. McBroone, M.D.; S. McCammon, Secretary.	General inspection once a year.	

TOWNS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Patients isolated at home....	Yes; very favorable results.	Yes.....	Yes; no.....
Yes; house quarantined and placarded	No cases.....	Yes.....	No; no.....
Patients are isolated from the other members of the family as far as practicable.	Anti-toxine has been used in five different cases successfully each time.	Yes.....	No; no.....
When necessary it is effected by removing to other quarters those members of the family who are free from contagion.	Yes, and the result has been very successful.	M.H.O. attends to disinfection.	Yes; no.....
.....	Occasionally with negative results.	Yes.....	No; no.....
No isolation.....	Cannot say.....	Yes.....	Schools inspected frequently.
Yes; placarding; isolating patient and complete quarantine; no hospital.	Yes; very favorable....	Yes.....	Yes; no.....
All cases isolated; no hospital.	Yes.....	Yes.....	Yes; no.....
Isolation is carried out in an imperfect manner.	Not in general use.....	Yes.....	No.....
Yes; houses placarded and quarantined.	Yes; results good.....	Yes.....	Yes; no.....
Yes; houses placarded.....	Partially used; good results.	Yes.....	No.....

TOWNS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Brampton	Yes	Wells, 25 feet	Yes; no	Four; offal fed to pigs.
Clinton	Yes	Wells, 30 to 50 feet	No system; tuberculine test is used.	Five; yes; buried; no.
Cobourg	Yes	Partly from wells and partly from waterworks; wells from 20 to 30 feet deep.	Yes; no tuberculosis	Three; The butchers' pay a license; offal fed to hogs.
Cornwall	Don't know	Water is taken from River St. Lawrence and supplied through the waterworks; in outlying portions of the town wells are used; depth about 30 feet.	No	Three; not licensed; offal buried in fields; no.
Collingwood	No	Waterworks system	No; no	Three; no; cooked and fed to hogs; no.
Dundas	Yes	Town water; through springs.	No	None
Essex	Yes	Artesian wells, depth of wells about 120 feet.	No no	None; no
Forest	No	Wells	No; no	No slaughter houses
Fort William	Yes.	From river; waterworks under way.	No	Three; inspected monthly; offal fed to hogs.
Galt	Yes	Springs, artesian wells, under control of town waterworks.	Yes; no	None
Gananoque	No	Wells, 30 to 32 feet depth.	No	None

TOWNS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made? How is cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
Yes; private contract.....	No	One gas establishment .	No.
Yes; ratepayers pay their own cost.	No	None	No.
No; each householder has to remove it at his own expense.	Yes; in two streets only.	One storehouse for hides.	No.
Yes; night soil is deodorized and removed in barrels at a cost of 50c per barrel.	Yes; in about one-third of town.	Storing of hides	No.
Yes; each person has to pay for their own 15c. per month.	No.....	None	No.
Systematic removal; cost paid by owners and occupants.	No	No	No.
Yes; householder pays for removal.	Drains	None	No.
Yes.....	Not a complete system..	None	No.
....	Wooden drains	None	No.
Yes...	No	None	No.
Yes.....	No	None	No.

TOWNS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Gore Bay	J. Johnston, M.D; J. S. Hawkens, Secretary.	Action taken only on complaint.	No contagious diseases ....
Georgetown	W. J. Roe, M.D.; Geo. Goodwillie, Secretary.	General inspection twice a year.	Typhoid, 1 case..... ....
Goderich	W. J. R. Holmes, M.D; W. Mitchell, Secretary.	....	.....
Harriston	W. A. Harvey, M.D.; A. G. Stewart, Secretary.	Yes; yes.....	No contagious diseases.....
Kincardine	N. Hopkins, M.D.; J. Scougall, Secretary.	General house to house inspection yearly.	Diphtheria, 5 cases; typhoid, 4 cases.
Kingsville..... .	R. D. White, M.D.; W. A. Smith, Secretary.	General inspection several times a year.	Tuberculosis, 2 cases.....
Leamington	E. T. Eade, M.D.; W. C. Coulson, Secretary.	Inspected at intervals.....	Typhoid, 3 cases..... ....
Listowel	L. W. Thompson, M.D.; W. G. Binning, Secretary.	Yes; yes.	Scarlatina, 1 case; typhoid, 6 cases; tuberculosis, 2 cases, 2 deaths.
Lindsay.....	J. McAlpine, M.D.; F. Knowlson, Secretary.	General inspection.....	Scarlatina, 1 case; Diphtheria, 4 cases; typhoid, 10 cases.
Meaford	J. S. Clark, M.D.; G. G. Albery, Secretary.	Only on complaint	Scarlatina, 2 cases ....
Mount Forest ..	No M.H.O.; W. C. Perry, Secretary.	General inspection.....	Scarlatina, 1 case; diphtheria, 1 case; typhoid, 2 cases.
Milton	H. A. McCole, M.D.; R. Coates, Secretary.	General inspection every spring.	No contagious diseases.....

TOWNS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Yes; no hospital		Yes	No; no
Yes; no hospital		Yes	M. H. O. inspects schools.
Yes; no hospital	No diphtheria this year	Yes	No; no
Yes		Yes, when required	Yes
No hospital		Yes	No
Yes; isolated at home	No	Yes	No
Houses placarded		No	No
Yes	Not in general use; results favorable.	Under supervision of attending physicians	No
Yes		Under sanitary inspector.	Yes; no
Yes	I think not	No	No
Patients isolated at home		Not usually	No
		Yes	

TOWNS —*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Gore Bay	No	Springs, wells and lake	No; no	Two slaughter houses; no license; fed to pigs.
Georgetown	Yes	Waterworks system	No	One slaughter house under inspection.
Goderich	No	Lake Huron, and wells 8 to 10 feet.	No; no	No
Harriston	Yes	Wells, 12 to 40 feet	No; no	None
Kincardine	No	Lake water		Two slaughter houses.
Kingsville	No	Wells and Lake Erie	No	None
Leamington	No	Wells and waterworks	No	None
Listowel	No	Wells	No; no	Two; not inspected; offal fed to hogs.
Lindsay	Yes	Waterworks	No; no	One; licensed
Meaford	Yes	Waterworks	No; no	One; no license
Mount Forest	Yes	Wells	No; no	Two; no license
Milton	Yes	Wells	No	None

TOWNS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made? How is cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No; no	No	None	No.
Yes; at owner's cost	No, but one is contemplated.	None	No.
No	Yes, put in sewers this year; 50 connections.	None	No.
No	No	None	No.
By householder	None	None	No.
No	None	None	No.
No	No	None	No.
No	No	One gas works; 1 tannery; 2 storing of hides.	No.
No	No	None	One prosecution for not reporting a case of diphtheria.
No	No	Two tanneries	No.
No	No	None	One against a butcher for keeping slaughter house in filthy condition offender fined.
No	No	None	No.

TOWNS.—*Continued.*

Name of municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board?	Contagious diseases.
Napanee	No M. H. O.; J. E. Herring, Secretary.	House to house inspection .	Scarlatina, 1 case ....
Newmarket ...	W. G. Hutt, M.D.; David Lloyd, Secretary.	Two general inspections yearly.	Scarlatina, 2 cases; typhoid, 4 cases; tuberculosis. 5 cases.
Niagara	No. M. H. O.; R. Wilkinson, Secretary.	General sanitary inspection frequently repeated.	....
North Toronto..	S. R. Richardson, M.D.; W. J. Douglas, Secretary.	General inspection.....	Tuberculosis, 1 case .....
Owen Sound....	A. Cameron, M.D.; T. Gordon, Secretary.	General inspection; also of shops and factories.	Scarlatina and diphtheria some cases.
Pembroke	W. W. Dickson, M.D.; A. J. Fortier, Secretary.	General inspection.....	Scarlatina, 10 cases; diphtheria, 5 cases, 1 death; typhoid, 12 cases.
Port Hope.....	L. B. Powers, M.D.; J. W. Sanders, Secretary.	. ...	Scarlatina, 100 cases, 1 death; tuberculosis, 11 cases, 11 deaths
Port Arthur....	G. S. Back, M.D.; James McTeigue. Secretary.	Yes; yes	Diphtheria, 1 case; tuberculosis, 1 case, 1 death.
Paris	D. Dunton, M.D.; S. Dadson, Secretary.	One general inspection....	Scarlatina, 10 cases; diphtheria, 2 cases, typhoid, 1 case.
Parry Sound....	J. R. Stone, M.D.; W. J. Haight, Secretary.	General inspection.....	Diphtheria, 1 case; tuberculosis, 2 cases.
Petrolea	A. K. Sturgeon, M.D.; G. S. McPherson. Secretary.	Yes	Diphtheria, 30 cases, 2 deaths; typhoid, 4 cases, 1 death; tuberculosis, 9 cases, 9 deaths.

TOWNS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
House placarded.....	Yes	Left in the hands of physician in attendance.	No; no ....
Isolation is systematically carried out.	.....	Yes	Yes, as to sanitary condition.
.....	....	....	No ....
.....	....	....	.....
.....	....	... .	....
Yes	Used generally; results very satisfactory.	No	The M. H. O. makes occasional inspection.
Houses placarded	....	Yes	Yes .....
Houses placarded; clothing and bedding burned.	Yes; results excellent ..	Under personal supervision of sanitary inspector.	Yes; no .....
Yes	Yes	No	Yes .....
I believe so; no hospital	In some cases.....	As far as possible	No .. ..
Yes; burning sulphur	Yes; satisfactory.....	Yes	Yes; no .....

TOWNS.—*Continued.*

Name of municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board.
Napanee	Yes	Wells and waterworks	No	None
Newmarket	No	Wells, waterworks	No	Two; not licensed
Niagara	No	Niagara river	No; no	Three; only allowed to be used during winter months.
North Toronto				
Owen Sound			A general inspection of dairy cows.	
Pembroke		Ottawa River	Generally inspected.	None
Port Hope	Yes	Waterworks and wells	No	None
Port Arthur	No	Waterworks	Yes; no cases	Four; not licensed
Paris	Yes	Waterworks; some wells	No	No
Parry Sound	Yes		No	Three; no license
Petrolea	Yes	From the lake	Yes; no; no	Fed to hogs

TOWNS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made? How is cost calculated?	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No	Five blocks with a proper system, balance stone sewers.	Tallow melting, 1; storing of hides, 1; soap boiling, 1.	No.
Garbage and night soil is systematically removed.	No	None	No.
	Partial system		One; not proven.
			One case of impure drainage; a conviction was obtained; another for having a foul ditch; conviction.
			No.
No systematic removal	No	None	No.
	No	None	No.
Yes; buried and burnt	Yes; very few houses	None	One prosecution; taking night soil to nuisance ground and not destroying it; dismissed with costs.
Yes, of night soil	No	None	No.
Yes	No	None	No.
Yes; 50 cents per barrel	Yes	None	No.

TOWNS.—*Continued.*

Name of municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board?	Contagious diseases.
Penetanguishene	Geo. Bowman, M.D.; W. H. Hewson, Secretary.	General sanitary inspection	Diphtheria, 2 cases, 1 death; tuberculosis, 2 cases.
Point Edward ..	H. N. Hayes, M.D.; W. Mitchell, Secretary.	General inspection.....	Typhoid, 3 cases; tuberculosis, 2 cases.
Peterborough...	J. Clarke, M.D.; S. R. Armtrong, Secretary.	House to house inspection carried out by sanitary inspectors who include the whole police force.	Diphtheria, 33 cases, 3 deaths; scarlet fever, 19 cases, no deaths; typhoid, 12 cases, 1 death; measles, 3 deaths; whooping cough, 2 deaths; tuberculosis, 20 deaths.
Palmerston	J. A Greenlaw, M.D.; S. Caswell, Secretary.	Repeated at intervals	Scarlatina, 1 case; typhoid, a few cases.
Rat Portage	S. S. Scovil, M.D.; J. K. Brydon, Secretary.	Regular inspection.....	Scarlatina, 2 cases; diphtheria, 3 cases, 1 death; typhoid, 130 cases, 10 deaths; tuberculosis, 2 cases, 1 death.
Renfrew	N. McCormack, M.D.; J. K. Rochester, Secretary.	Regular inspection.....	Diphtheria, number of cases; scarlatina, a number of cases.
Sault Ste. Marie.	No M. H. O.; J. Bassingthwaight, Secretary.	Only on complaint.....	Scarlatina, 6 cases; diphtheria, 6 cases, 1 death; typhoid, 25 cases; tuberculosis, 2 cases, 2 deaths.
Simcoe	J. C. C. Grasett, M.D.; W. C. McCall, Secretary.	General inspection.....	Scarlatina, 10 cases; diphtheria, 1 case, 1 death; tuberculosis, 1 death.
Smith's Falls ...	C L. Easton, M.D.; B. E. Sparham, Secretary.	Yes	Scarlatina, a number of cases, 2 deaths; typhoid, 4 cases; tuberculosis, 6 cases.
Strathroy	G. Henderson, M.D.; F. J. Craig, Secretary.	Inspection in spring and fall.	Diphtheria, 5 cases, 3 deaths; tuberculosis, 1 case, 1 death.
Tilsonburg	C. McDonald, M.D.; A. Raynes, Secretary.	General inspection twice a year.	Scarlatina, 4 cases; diphtheria, 5 cases; typhoid, 3 cases, 1 death.

TOWNS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Yes, as far as possible	No	Yes	No; no .....
Yes	Used in several cases; results satisfactory.	Yes	Yes .....
.....	....	....	....
As far as possible; no hospital possible.	No diphtheria for several years.	No	No; no .....
Yes	Good results.....	Yes	No ....
Hospital in course of erection.	....	....	.....
No	Yes	No	No; no .....
Yes	Yes; very good results .	Yes	No .....
Houses placarded	.....	No	Yes; no.....
Houses placarded	No	Yes	No .....
No	No	No	No ....

TOWNS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state the usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Penetanguishene	Yes	Town waterworks	No; no	One; no license; offa fed to hogs.
Point Edward ..	Yes	Wells, 20 to 25 feet deep.	No; no	No slaughter houses....
Peterborough ..	.....	.. ..	....	No complaint duringthe year.
Palmerston.....	No; don't know.	Well water	No; no	None; no; supposed to be boiled.
Rat Portage	Yes	From wells and lake....	No	Four; no license .....
Renfrew.....	.....	.....	.....	....
Sault Ste. Marie.	No	Waterworks	No	Two; no license .....
Simcoe	Yes	Wells, 12 to 30 feet	No systematic inspection.	None .....
Smith's Falls ...	No	... .	Not that I am aware of.	None .....
Strathroy	Yes	Wells, 15 to 20 feet	Yes	Two; not licensed ....
Tilsonburg	Yes	Wells, 15 to 20 feet	No	Three; no.....

TOWNS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made. How is cost calculated?	Is there a public sewerage system? If so what proportion of houses of whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during year under Public Health Act? State in detail the nature of the case, and results of same.
No	Yes	None	No.
No system	No	None	No.
Removal of garbage and excreta has been carried out very thoroughly.			
By individual effort	No	No	No.
Garbage removed	A system of sewerage is now being put in.	None	Five prosecutions; in each case a conviction obtained.
Under contract			
Garbage removed by h useholder.	No	None	One information laid: no action.
Yes	A partial system	None	No.
Yes; 50 cents per barrel	No	None	No.
Yes; by contract	No	One tannery	No.
Yes; 20 cents per house per month.	No	None	No.

TOWNS.—*Concluded.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Thorold	J. K. Johnstone, M.D. ; W. F. Fish, Secretary.	Once a year	No contagious diseases .....
Trenton	J. S. Shurie, M.D. ; G. Young, Secretary.	Yes	Scarlatina, 4 cases, 1 death ; diphtheria, 6 cases, 2 deaths.
Toronto Junc'n.	A. C. Mavey, M.D. ; S. Ryding, Secretary.	Monthly inspection.....	....
Whitby	D. P. Bogart, M. D. ; Joseph White, Secretary.	Action taken on complaint.	Scarlatina, 3 cases ; typhoid, 1 case, 1 death ; tuberculosis, 1 case, 1 death.
Walkerton	G. J. Dickson, M.D. ; W. S. Gould, Secretary.	Yes, general inspection....	Diphtheria, 7 cases ; tuberculosis, 2 cases, 2 deaths.
Walkerville	C. W. Hoare, M.D. ; C. H. Robinson, Secretary.	Yes	Diphtheria, 1 case ; scarlatina, 4 cases.
Wiarton	H. Wigle, M.D. ; W. J. Ferguson, Secretary.	Yes	Diphtheria, 4 cases ; typhoid, 1 case ; tuberculosis, 2 cases, 2 deaths.
Wallaceburg ...	Geo. Mitchell, M.D. ; H. E. Johnson, Secretary.	Yes	Scarlatina, 1 case, 1 death ; diphtheria, 6 cases, 2 deaths.
Woodstock	A. McLay, M.D. ; J. Morrison, Secretary.	General inspection.....	The town has been extremely free from contagious diseases.
Wingham	W. B. Towler, M.D., J. B. Ferguson, Secretary.	Sanitary inspector makes inspection.	Typhoid, 1 case reported : tuberculosis, 1 case, 1 death.

TOWNS.—*Concluded.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is Diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
.....	No	....	Yes .....
Yes	.....	It is.....	Yes; no.....
No	No	Yes	.....
No hospital	.....	Yes	No .....
Yes; houses placarded: no hospital.	Not used	Yes	No; no .....
Yes; no isolation hospital ..	Yes	Yes	Yes .....
Fairly well looked after; no hospital.	Yes	No	No .....
Yes; no hospital.....	Yes; good results	Yes	No .....
....	.....	.....	....
Yes	No cases of diphtheria..	Yes, under supervision of attending physician.	No .....

TOWNS.—*Concluded.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious disease supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used?	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Thorold	Yes	Wells	No	No
Trenton	Yes	Waterworks		One; fed to hogs
Toronto Junc'n.		Lake Ontario		None
Whitby	Yes	Wells, 20 feet		Three; under inspection.
Walkerton	Yes	Complete water works system, a few wells.	No; no	Four; no inspection; offal boiled and fed to pigs.
Walkerville	Yes	Detroit river.	No	One slaughter house
Wiarton	Yes; no	Colpoy's bay, water works.	No; no	None
Wallaceburg	Yes	Wells	Yes	One slaughter house, no license.
Woodstock		Waterworks		
Wingham	Yes	Wells, from 16 to 30 feet.	None.	None

TOWNS.—*Concluded.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers?	State No. and kinds of noxious trades, (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during year under Public Health Act? State in detail the nature of the case, and results of same.
Yes	No	None	No.
Yes ; removed by contract.	No	None	No.
Garbage removed by contract.	Part of town has sewers.	None	... .
No.....	No	None	No.
By private parties only, no contract.	A partial system, which is being extended from time to time.	None	No.
Yes	Yes ; four-fifths of houses are connected.	None	No.
Yes	Only a partial system...	None	No.
Yes, of night soil.....	No	None	No.
....	M. H. O. recommends the extension of sewerage system.	None	No.
None	None	None	None.

VILLAGES.

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board?	Contagious diseases.
Acton	No M. H. O.; T. T. Moore, Sec.	Yes; once a year during the month of May.	None
Arkona	E. M. Copeland, M.D.; T. W. Trimble, Sec.	Once every year	Typhoid, 1 case; tuberculosis, 1 case, 1 death.
Alexandria	D. D. McDonald, M.D.; A. S. Smith, Sec.	Yes; Sanitary Inspector visits all premises in municipality at regular intervals whether complaint is made or not, and on special occasions when complaints are made.	Typhoid, 25 cases; diphtheria, 1 case.
Alvinston	A. MacKinnon, M.D.; R. Code, Sec.	Yearly inspection	Typhoid, 1 case, 1 death; tuberculosis, 1 case, 1 death.
Bobcaygeon	Chas. E. Bonnell, M.D.; Chas. Stewart, Sec.	General supervision by Sanitary Inspector and action taken on complaint.	Diphtheria, 4 cases; typhoid, 1 case, 1 death.
Bayfield	C. Sheppard, M.D.; John Biggar, Sec.	Inspection once a year and when complaint is made.	Tuberculosis, 1 case
Brussels	J. A. McNaughton, M.D.; T. S. Scott, Sec.	Yes; Yes	Tuberculosis, 2 cases, 2 deaths
Beeton	D. J. Dunn, M.D.; Joseph Wright, Sec.	General inspection twice yearly.	Scarlatina, 6 cases
Burk's Falls	Dr. Crawford; E. Bazett, Sec.	General inspection once a year, in the spring; repeated when necessary.	Diphtheria, 4 cases, 1 death; typhoid, one case; tuberculosis, 1 case, 1 death.
Brighton	N. B. H. Dean, M.D.; J. H. Morrow, Sec.	No; only on complaints	Tuberculosis, 2 cases, 2 deaths

VILLAGES.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is Diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the publicschools? Does it require a certificate of vaccination from new school children each year?
No	No	No	No
Yes, when necessary by isolation in residence; no hospital.	No cases	Yes	Not unless called upon to do so.
Houses in which typhoid patients were confined were not placarded, but usual precautions as to disinfection were taken.	Yes, but no opportunity was afforded this year.	Yes	Yes; no
Yes	No cases	Yes	No
Houses are placarded and patients isolated; no hospital.	Not yet used	The M. H. O. or attending physician look to the disinfecting.	No
Yes	No cases	No	No; no
Yes, by placarding house; no.	No cases	Yes	Yes; no
No hospital, but cases kept isolated as far as possible.	Two physicians use it; results satisfactory.	Either an officer of the Board or physician in attendance.	No; no
Yes; isolate the house; no hospital.	Yes; no cases this year in which anti-toxine is used.	Yes	No
Yes; houses placarded and dwellings isolated.	No	Yes, by Health Officer.	Yes; through Health Officer.

VILLAGES.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases, supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred? and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Acton	No	From wells 16 to 30 feet deep.	No	None; no inspection.
Arkona		From wells about 20 feet.	No; no cases occurred.	None; no
Alexandria	No	Wells and waterworks, ground water being very low.	No	No slaughter houses allowed in municipality.
Alvinston	No	Wells 8 to 10 feet	No	None
Bobcaygeon		A pipe from a spring to a fountain and wells about 10 feet deep.	No inspection; believe tuberculine test has been tried on one herd.	Two; not licensed; offal fed to pigs; no inspection.
Bayfield	No	Wells	No; no	One; no
Brussels	Yes	Well 10 to 15 feet rock	No; no; no	None
Beeton	Are to M. H. O. but not to teachers.	Wells 20 feet	No; in one case test was used; no.	One; no; supposed to be hauled away.
Burk's Falls	Yes	Wells	No	None within the municipality.
Brighton	Yes	Wells 10 to 30 feet	No; no infection and none reported.	Two; no burial; no inspection.

VILLAGES.—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
None	No	None	No.
No	No	None	No.
Garbage and night soil removed by scavengers to dumping ground outside the municipality; scavengers act under direction of Board and are paid by each householder for what they do.	No	Two; tanneries which are inspected from time to time.	Yes; one; a conviction was obtained and afterwards set aside.
Yes	No	None	No.
General cleaning up of yards every spring.	None	None	None.
No	No	None	No.
No	No	None	No.
No	No	None	None.
No	No	None	No.
No; every one does as he feels disposed.	No	None	No.

VILLAGES.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board	Contagious diseases.
Bridgeburg	Dr. J. R. Mincke; H. Emrick, Sec.	General inspection every year and when complaint is made to the Board.	Scarlatina, 2 cases; diphtheria, 2 cases, 2 deaths; typhoid, 1 case.
Bolton	Wm. J. Lepper, M.D.; Samuel Walford, Sec.	Yes, in May or June, and when complaints are made which seldom occur.	Diphtheria, 2 cases; tuberculosis, 1 case.
Blyth	W. J. Milne, M.D.; Thos. W. Scott, Sec.	General inspection once a year and when complaint is made.	Scarlatina, 2 cases; typhoid, 5 cases; tuberculosis, 2 cases.
Beamsville	Wm. A. Comfort, M.D.; Chas. E. Kiggins, Sec.	An annual inspection and on complaint.	None.....
Belle River.....	N. J. Aymot, M.D.; D. Dumouchelle, Sec.	Action taken only when complaint is made to the Board.	Scarlatina, 3 cases .....
Burlington	A. A. Speers, M.D.; James Allan, Sec.	General sanitary inspection once every year.	Typhoid, 3 cases.....
Beaverton	A. Grant, M.D.; C. A. Paterson, Sec.	Yes; twice a year	Tuberculosis, 3 cases, 3 deaths...
Bath	H. S. Northmore, M.D.; M. Robinson, Sec.	Yes; yes.....	None..... ....
Casselman... ..	J. A. Riddell, Sec..... ..	Only when complaint is made.	None .....
Clifford	Geo. Harrison, M. D.; R. E. Bigger, Sec.	Inspection twice a year....	None ....
Cardinal.	D. Gow, M. D.; James Glasford, Sec.	Yes; once yearly.....	Tuberculosis 1 case, 1 death ....
Colborne	W. A. Willoughby, M.D.; Geo. Keys, Sec.	Yes; yes, also upon complaint.	Scarlatina, 2 cases; typhoid, 4 cases.

VILLAGES.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Isolation strictly carried out; use of disinfectants; change of clothing, burning of bedding, etc., private funerals; no isolation hospital.	Yes; in one case two injections of 1,000 c. c.; apparent improvement following; death from heart failure on 6th day.	Yes	No
Yes; on the premises where disease is; no isolation hospital.	Physicians have anti-toxine, but have not yet had a fair opportunity to test it.	Yes	There has been an inspection by the Board as a Board.
Yes	No diphtheria in 1897	Yes	Yes; no
None		None this year	No
No; none	Yes; results not favorable.	Yes.	No
Houses placarded	No cases of diphtheria	No	Health officer once a year inspects; no.
No	No	Yes.	No
Yes	Yes.	Yes.	Yes; no.
	No	Yes.	No
No hospital; patients isolated.	No cases.	No	No; no
Houses placarded and usual precautions taken.	No cases of diphtheria...	Yes, by the attending physician.	No
Yes	Yes; good.	Yes.	No; no

VILLAGES.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year. Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughterhouses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Bridgeburg	Yes.....	Wells about 40 feet	No	None.....
Bolton	No forms have been received for above purpose.	Wells 8 to 10 feet	No inspection; no tuberculosis.	None.....
Blyth	Yes.....	Wells 4 to 10 feet	No; no test has been made with tuberculine.	Two; yes; fed to hogs; yes.
Beamsville.	Yes.....	Waterworks.....	No	None.....
Bell River.....	Yes.	Wells; about 10 ft.	No; no	One; not licensed; offal fed to hogs.
Burlington	No	Wells.....	No; no tuberculosis.	None.....
Beaverton	No	Wells; 25 ft	No; no	None..... .....
Bath	No	From Bay Quinte	No	Two; Yes .....
Casselman.....	No	....	No; no	None.....
Clifford.	Yes	Wells; 16 to 24 ft	No	Two .. ..
Cardinal.	.....	St. Lawrence River and some wells.	No; no	None.....
Colborne.	No	Wells	No; no	None.....

VILLAGES.—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers.	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, any results of same.
Yes; not known.....	No	None	No.
Garbage raked up and burned by each ratepayer; night soil removed by farmers.	None	None	No prosecutions.
Yes.....	No	None	No.
No	No	None.....	No.
No	None.....	None.....	No.
Garbage removed by those living on premises.	No	None.	No.
Yes; at the expense of householder.	No	None.....	No.
Householders attend to this at their own cost.	No	None.....	No.
No	No	None.....	No.
No	No	None.	No.
No	No	None....	No
Yes.	No	None.....	No.

VILLAGES.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board	Contagious diseases.
Chesley	Geo. Cooke, M.D. ; Joseph McNeil, Sec.	Yes ; yearly inspection and when complaint is made.	Typhoid 3 cases ; tuberculosis, 3 deaths.
Chapleau	No Board of Health ; W. J. Evans, M.D.	Yes.	Scarlatina, 2 cases ; diphtheria, 1 case, 1 death.
Chesterville	No M.H.O. ; Miles Knowland, Sec.	Yes ; repeated at intervals.	Typhoid, 1 case ; tuberculosis, 2 cases, no deaths.
Durham.....	James Gun, M.D.; George Russell, Sec.	Yes.	None .....
Drayton	R. M. Williams, M.D.; A C. Woodman, Sec.	Yes ; yes	Typhoid, 1 case, 1 death ; tuberculosis, 1 case, 1 death.
Dunnville.....	A. M. Clark, M. D.; J. W. Holmes, Sec.	Yes ; continuous by sanitary inspectors.	Diphtheria, 43 cases, 3 deaths...
Dresden.....	No M.H.O.; John Chapple, Sec.	General sanitary inspection once a year, and at intervals as occasion requires.	Scarlatina. 1 case ; typhoid, 2 cases; tuberculosis, 1 case, 1 death.
Delhi	R. B. Wells, M.D. ; Roger Crysler, Sec.	Yes	Typhoid, 1 case ; tuberculosis, 2 cases.
Dundalk	Jas. McWilliams, M.D. ; W. J. Wardell, Sec.	Yes ; yes	None ....
Elmira	N. Ullyatt, M.D. ; John H. Ruppel, Sec.	Yes ; yes ; no.....	None ....
Elora	No M.H.O.; Alex. Petrie, Sec.	Yes ; yes	Tuberculosis, 2 cases, 2 deaths ..
Erin	H. Gear, M.D.; Wm. Conboy, Sec.	Yes ; Yes	None ....

VILLAGES.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results in treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Yes; complete isolation at residence.	Yes; no cases	Yes.	Yes; no
Yes; house placarded and inmates not allowed to mingle with the public; no hospital.	Yes.	Yes.	No Board
Yes.	No cases.	Yes.	No; no
Not required.	No cases	Yes.	Yes
Yes.	Yes.	Yes.	Yes; no.
Yes; patients are isolated in a room distant from other members of family, a sheet being placed over the door saturated with disinfectant.	Yes; the physicians are delighted with it.	Yes.	Yes; no.
Carried out under directions of medical attendant.	Yes; physicians here report it as generally successful.	Under supervision of medical attendant.	Yes; yes
	Yes, treatment very satisfactory.		Yes; no.
No diseases this year	No cases of diphtheria this year.	It would be required	No; no
No; none		Yes	Yes; no
No	Not required	No	No; no
Yes, ordinary precautions taken.	No	Yes	No; no

VILLAGES.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughterhouses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Chesley	M. H. O. only	Wells; 8 to 40 ft.	No	None
Chapleau	No	Wells; 20 to 40 ft.	No	One
Chesterville	No	Wells	No; no	One; no
Durham	Yes	Wells; 30 ft.	No	None
Drayton	Yes	Springs	No; no	None; no; no
Dunnville	Yes.	Chiefly from wells	No	None
Dresden	Yes	Wells from 20 to 30 ft.	No; no dairy cows in municipality.	None; no
Delhi		Wells 25 ft	No dairy cows; no.	None
Dundalk	Yes	Wells	No; no tuberculosis	Two; yes; fed to hogs: no inspection of carcasses.
Elmira	No	Wells 50 ft	Yes; yes; yes	Two; yes
Elora	No	Wells 12 to 40 ft.	No	Three; no license
Erin	Yes	Wells 25 to 30 ft	No; none	None

VILLAGES —*Continued*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
Yes; have dry earth system.	No		Yes, two prosecutions for keeping hogs in municipality, fined.
No	No	None	No.
No	No	None	No.
Yes.	No		No.
Yes.	No	None	No.
No	Partial	None	No.
Removed by householder when necessary.	No	None	No.
No	No	None	No.
Yes	No	None	No.
No	No	None	No.
No	No	None	No.
None	No	None	No.

VILLAGES.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint is made to Board.	Contagious diseases.
Exeter	T. A. Amos, M.D.; M. Eacrett, Sec.	General inspection	Tuberculosis, 5 cases, 5 deaths
Eganville	Jas. Reeves, M.D.; John A. Kitts, Sec.	Twice during the year	Scarlatina, 11 cases; diphtheria, 3 cases; typhoid, 2 cases.
Fergus	W. H. Johnson, M. D.; Wm. Ross, Sec.	Once a year and when complaints are made.	Diphtheria, 1 case; scarlatina, 2 cases, 1 death; typhoid, 1 case, 1 death tuberculosis, 1 death.
Hintonburgh	J. G. Smith, M.D.; W. A. Mason, Sec.	Sanitary inspection made regularly every year.	Scarlatina, 4 cases; diphtheria, 9 cases.
Hagersville	Robt. McDonald, M.D.; John H. Scott, Sec.	Once a year and when complaints are made.	Diphtheria, 1 case; tuberculosis, 1 case.
Hespeler	R. McIntyre, M.D.; A. J. Brewster, Sec.	Action taken when complaint is made to the Board.	None
Huntsville	F. L Howland, M. D.; Wm. Rumsey, Sec.	Yes; at intervals	Diphtheria, 1 case; typhoid, 16 cases: tuberculosis, 1 case, 1 death.
Holland Land'ng	—— Howe, M.D.; F. J. Sheppard, Sec.	Every spring and when complaint is made.	None
Hensall	Jas. Macdiarmid, M D.; H. J. D. Cooke, Sec.	Inspection every spring and action taken when complaint is made.	Scarlatina, 12 cases.
Hastings	R. Coughlan, M.D.; Alex. Wilson, Sec.	Yes, at intervals	None
Lakefield	Alex. Bell, M.D. Sec.	Twice a year, and action taken when required.	Scarlatina, 3 cases; diphtheria, 1 case; tuberculosis, 4 deaths
Lanark	No M.H.O.; W. A Field, Sec.	General sanitary inspection.	None
Lucan	——Hossock, M.D.; G. A, Stanley, Sec.	General inspection each spring.	Typhoid, 1 case; tuberculosis, 1 case.
Madoc	E. D. Harrison, M.D.; B. O'Hara, Sec.	Yes; yes	None

VILLAGES.—*Continued*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
No system	Yes	No; physician in attendance looks after it.	Yes
Yes, house placarded; sanitary inspector placed in charge.	No; used in one case with satisfactory results.	Yes	No; no
Yes, as well as possible	No cases to try it in	Yes	
Yes; majority of cases sent to isolation hospital at Ottawa.	Recommended but not always used; results generally good.	Yes; under direction of M. H. O.	No
Yes		Yes	Yes.
Placard the house	Don't know	Yes	No
Yes	No	Yes	No
Yes; none	None	Yes	No
Premises placarded and inmates strictly confined.		Yes	No; no
	No diphtheria		Once a year; no
Yes, except tuberculosis; houses placarded and all external communication forbidden.	No	Yes, in all cases	No
No; none	Don't know	No contagious diseases	No; no
None	Did not require it	Yes	No; no
			No; no

VILLAGES.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board.
Exeter	No	Springs	Yes; no cases of tuberculosis.	Two; not licensed; offal fed to hogs.
Eganville	Yes	Wells 25 ft		None
Fergus		Wells	No dairy; have not heard of any tuberculosis.	One; no
Hintonburgh	No	Wells	Yes; tuberculosis has occurred and test applied.	None
Hagersville	No	Wells 10 to 20 ft	No	Two; no; offal fed to hogs; no inspection.
Hespeler	Yes	Wells 20 ft	No	None
Huntsville	No	Waterworks and wells	No	None
Holland Land'g.	No	Wells and springs, 15 to 20 ft	No; none	None
Hensall	No	Wells 30 to 35 ft	No; no	None
Hastings	No	Springs	No	None
Lakefield	Yes	Wells, 18 to 30 ft	No	None allowed in corporation.
Lanark	No		No; don't know of any cases of tuberculosis.	Two; not licensed; don't how offal is disposed of.
Lucan	Yes	Wells, 35 ft	No; none	None
Madoc		Wells	No	Two; no; buried; no.

VILLAGES.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made. How is the cost calculated?	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act). How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No	Yes	None	No.
No	No	None	No.
No	No	None	No.
Yes: at an average cost of $1 to each family.	No	None	No.
No	No	None	No.
Yes	No	None	No.
Each householder runs his own under supervision of inspector.	No	None	No.
No	No	No	No.
No	No	None	No.
No; excepting hotels and schools.	No	No	No.
No; each householder attends to his own premises.	No	None	No.
No systematic removal	No	None	No.
Each person is compelled to attend to the removal of night soil.	No	None	No.
No	No	None	No.

VILLAGES.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Millbrook	N. C. McKinnon, M.D. ; Wm. Turner, secretary.	Once a year, and when complaints are made.	Tuberculosis, 1 case, 1 death ....
Markham	—— Robinson, M.D. ; M. White, secretary.	Yes ; yes.	Scarlatina, 14 cases, 2 deaths ; diphtheria, 4 cases ; tuberculosis, 1 death.
Merritton	J. F. Vanderburg, M.D.; R. Clark, secretary.	Repeated at intervals by sanitary inspector.	Diphtheria, 1 case, 1 death .....
Merrickville....	M. R. Church, M.D. ; J. Johnston, secretary.	General sanitary inspection made each year.	Diphtheria, 4 cases, 1 death ; tuberculosis, 2 cases, 2 deaths.
Maxville	J. T. Monro, M.D.; Chas. McNaughton, secretary.	.. ..	Diphtheria, 2 cases ; tuberculosis, 2 cases.
Newcastle	John McNaughton, M.D.; Geo. Curtis, secretary.	General sanitary inspection.	Typhoid, 1 death .....
Norwood	S. P. Ford, M.D. ; Jas. Calder, secretary.	General inspection once a year, and when complaints are made.	Diphtheria, 1 case ; tuberculosis, 1 case, 1 death.
Norwich	E. E. Harvey, M.D.; Wm. Fairley, secretary.	General inspection each year.	Tuberculosis, 4 cases, 4 deaths...
Newburg	M. J. Beeman, M. D, ; Chas. Welbanks, secretary.	Yes ; yes	Typhoid, 8 cases ; tuberculosis, 1 case, 1 death.
Omemee	J. N. Thompson, M.D.; G. A. Balfour, secretary.	General	None .....
Ottawa East....	G. Baptia, M.D. ; W. W. Barry, secretary.	Yes, every spring and when complaint is made.	Tuberculosis, 1 case.....
Parkhill.....	Thos. Ovens, M.D.; T. A. Maburry, secretary.	Annual inspection, early part of summer.	Diphtheria, 11 cases, 1 death tuberculosis, 2 cases. 2 deaths.
Preston	W. B. Duck, M.D.; W. A. Husband, secretary.	One annual inspection, and a second inspection when complaint is made.	Scarlatina, 1 case ; diphtheria, 2 cases.

VILLAGES.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is Diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
House placarded.....	Not used	Yes	M. H. O. inspects schools
Yes; infected houses are quarantined.	Yes	Yes	Yes; yes ....
Houses placarded and isolated.	No	No	No; no .....
Yes, as much as possible....	No	Yes	No ....
No	No	Not always	No .....
No	....	Yes	No .....
No; no hospital; houses placarded under direction of M.H.O.	Only 1 case in several years.	Yes	No .....
No; none.....	None used.....	Yes, in diphtheria and scarlet fever cases.	No; no .....
Yes	No occasion	Yes	Yes; no .....
Placarded and isolated	No diphtheria	Yes	No .....
Yes; some patients are sent to contagious hospital in city of Ottawa.	None used this year	Yes	No ....
Yes, as soon as report is made placards posted up, and positive orders not to allow any one in or out of premises.	Yes, results very satisfactory.	Yes	No ....
Quarantine the house; no hospital.	Yes; results good.....	Yes	Yes; no ....

VILLAGES.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year. Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Millbrook	No	Springs	None kept	Two; not licensed; boiled and fed to hogs
Markham	Yes	Wells 15 ft	Yes; no cases of tuberculosis	None
Merritton	Yes	Waterworks system	No; no	None
Merrickville	Yes	Wells	No	None
Maxville	No	Well, 20 ft	No	Two; unlicensed
Newcastle	M.H.O. supplied	Wells, 25 ft	No; no	Two
Norwood	Yes	Wells, 20 ft	No; no	None
Norwich	Yes	Wells, 30 to 40 ft	No; no	One; no inspection; no license; offal fed to hogs.
Newburg	No	Springs	No	One outside of village.
Omemee	No	Wells	No	None
Ottawa	No	Wells, 12 to 14 ft	No; no; no	Two; offal used as manure; no.
Parkhill	No	Wells, 100 ft	No	None
Preston	No	Wells, 40 ft	No; no	None

VILLAGES.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made. How is the cost calculated?	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
Yes; occupants pay cost of removal.	No	None	No.
No	No	None	No.
No; schools have dry earth closet system.	No	None	No.
Removed by contractors at a price per bbl. paid by parties owning property.	No	No	No.
	No	None	No.
Removed by the householders.	No	No	No.
No	No	No	No.
Removed by householder; no system established.	No	No	No.
Each resident attends to their own.	No	Tannery and cheese factory.	No.
	No	No	No.
No	No	No	Yes; a slaughterhouse case for feeding offal to pigs; $1 and costs.
Yes	No	No	No.
	No	No	No.

VILLAGES.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Portsmouth	No M. H. O.; Thos. Kelly, secretary.	General inspection in the spring and when complaints are made.	Tuberculosis, 5 cases, 5 deaths ..
Port Colborne ..	....	Action only when complaint is made.	Scarlatina, 2 cases; diphtheria, 1 case; tuberculosis, 1 case, 1 death.
Port Carling ...	—— Canniff, M.D.; R. G Penson, secretary.	Inspection repeated at intervals.	None .....
Port Perry	D. Archer, M.D.; F. M. Yarnold, secretary.	General inspection yearly, and when complaints are made to Board.	Diphtheria, 5 cases, 2 deaths; typhoid, 2 cases, 2 deaths; tuberculosis, 1 case, 1 death.
Port Stanley ...	L. J. Mothersill, M. D.; Jas. Gough, secretary.	Yes; once every year and when complaints are made.	Diphtheria, 13 cases .....
Port Dover	John R. Hamilton, M.D.; R. M. Taylor, secretary.	.....	Typhoid, 1 case, 1 death; tuberculosis, 1 case, 1 death.
Port Rowan....	E. Meek, M.D.; Jas. Ryan, secretary.	In May of each year, and when complaint is made.	None ....
Port Dalhousie .	John M. Considine, M.D., secretary.	Three or four times yearly.	Typhoid, 2 cases.....
Port Elgin	F. H. Wells, M.D.; Wm. Burgess, secretary.	Yes; repeated at intervals.	Scarlatina, 3 cases, 1 death; typhoid, 14 cases, 3 deaths; tuberculosis, 1 case.
Richmond Hill .	No M. H. O.; M. Teefy., secretary.	Yes, when required.....	.....
Richmond	R. C. Chanonhouse, M.D.; John Rielly, secretary.	General inspection once a year, and action taken when complaint is made.	Scarlatina, 16 cases 1 death.....
Streetsville	No M. H. O.; W. J. Pinney, secretary.	Two; house to house inspection during the year.	Typhoid, 3 cases, 1 death; tuberculosis, 1 case, 1 death.
Springfield	R. W. Shaw, M.D.; J. B. Lucas, secretary.	Yes	Scarlatina, 4 cases; typhoid, 2 cases, 1 death; tuberculosis, 1 case, 1 death.
Sutton	C. F. Noble, M.D.; Thos. Howard, secretary.	Yes	Scarlatina, 2 cases; diphtheria, 11 cases (imported from Toronto).
Sundridge.....	A. Carmichael, M. D.; James Dunn, secretary.	Yes	Typhoid, 3 cases.....

VILLAGES.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Usually removed to city hospital, Kingston.	Yes; no cases this year.	No	No; no
No; usually placarded		No	No
No		Yes	Schools inspected
Yes; no hospital	Yes; results very satisfactory.	By physician in attendance.	Inspection by sanitary inspector.
Yes; inmates of house isolated.	Yes; good success	Yes; the M. H. O.	No; no
By placarding of house only.	None required this year.	Not required this year	No; no
Houses placarded	Yes	Yes	No; no
	No	Yes	Yes
Yes	No cases	Yes	No.
	Don't know	Yes.	
Yes	No occasion to use it.	Yes	No
No hospital		Yes	Yes; no
Yes	Yes, if required	Yes	No; no
Yes	No	Yes	Yes.
Yes	No cases this year	Yes	Yes; no

VILLAGES.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water-bearing stratum.	Is there systematic inspection of dairy cows made during the year. Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Portsmouth	No	Wells	None; no	None; no .....
Port Colborne..	No	Wells and Lake Erie. ..	No	None .....
Port Carling ..	No	Lake and spring.....	No	One; no license; offal burned.
Port Perry	Yes	Wells, 18 ft	None	None .....
Port Stanley ...	No	Wells, 12 to 14 ft	No	Two; offal cooked and fed to hogs.
Port Dover	Yes; no.....	Wells	No	One .....
Port Rowan....	No	Wells	None	None ....
Port Dalhousie .	....	Wells	No	One; not licensed but inspected.
Port Elgin	Yes	Wells, 10 to 40 ft	No inspection; no cases; no test.	None .....
Richmond Hill .	.....	Wells	.....	Two; no licenses .....
Richmond	No	Wells, 20 ft	No; no	One; not licensed; offal drawn away; no.
Streetsville	Supplied to physician.	Wells, 35 ft	No; no	Two; one not licensed; offal fed to hogs.
Springfield	No	Wells, 20 ft	No; no	Two; offal buried; no.
Sutton	Yes	Wells, 19 to 20 ft	No	Two; not licensed but have been kept in sanitary condition; offal buried.
Sundridge	Yes	Springs	No; none	One; no; buried; no..

VILLAGES.—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No, except in spring; at cost of landlord or tenant.	No	None	No.
No	No	None	No.
Garbage and night soil are buried.	None	No	One; for over-crowding and bad ventilation of premises.
No	No	None	No.
No	No	None	No.
Dry earth closets	No	None	No.
No	No	No	No.
	No	None	No.
Yes	No	None	No.
No	No		No.
By householder	About 15 per cent. are connected with public sewer.	One slaughter house	No.
No; removal made by householder.	No	None	None.
No	No	No	No.
No	No	Slaughtering animals; tallow melting; storing hides.	No.
No	No	None	No.

VILLAGES.—*Concluded.*

Name of municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint is made to Board.	Contagious diseases.
Stirling	Jas. S. Sprague, M.D.; J. S. Black, secretary.	Yes	None
Stayner	No M. H. O.; C. E. Jakeway, secretary.	General inspection once a year, and when complaint is made.	None
Stouffville	I. A. Freel, M.D.; A. G. Brown, secretary.	Yes; once each year in spring.	Tuberculosis, 5 cases
Southampton	P. J. Scott, M.D.; James Howe, secretary.	General inspection	Scarlatina, 4 cases; diphtheria, 1 case, 1 death; typhoid, 1 case.
Teeswater	J. Gillies, M.D.; J. Farquharson, secretary.	Inspection at intervals	Scarlatina, 1 case; diphtheria, 2 cases; typhoid, 1 case; tuberculosis, 1 case.
Tara	— Wilson, M.D; J. D. Tobey, secretary.	Yes; yearly	None
Tilbury	M. Sharp, M.D.; A. A. Wilson, secretary.	Yes	None
Tottenham	C. Campbell, M.D.; Geo. P. Hughes, secretary.	Yes; twice a year	None
Tiverton	Wm. Egbert, M.D.; W. D. Weir, secretary.	Inspection once a year	None
Vienna	J. H. Hoover, M.D.; W. Watts, secretary.	Action taken only when complaint is made.	None
Watford	J. A. McLeay, M.D.; R. McLeay, secretary.	General sanitary inspection	Diphtheria, 8 cases, 3 deaths; typhoid, 4 cases; consumption, 3 cases, 3 deaths.
Waterford	A. C. Duncombe, M.D.; S. Cunningham, secretary.	General inspection once a year.	Scarlatina, 2 cases; tuberculosis, 1 death.
Woodville	No M. H. O.; J. C. Gilchrist, secretary.	Yes	Scarlatina, 2 cases
Woodbridge	No M. H O.; John McClure, secretary.	Sanitary inspector inspects twice a year.	Tuberculosis, 1 case, 1 death
Weston	E. F. Irwin, M.D.; R. H. Leighton, secretary.	Inspection once a month	Diphtheria, 3 cases; typhoid, 1 case; tuberculosis, 1 case, 1 death.
Wroxeter	S. M. Smale, M.D. W. H. Brown, M.D.; J. Cowan, secretary.	No	None
Winchester	————, M.D.; P. Mclaughlin, secretary.	Yes. Yes	Diphtheria, 3 cases, 1 death

VILLAGES.—*Concluded.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give result of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
No cases of contagious diseases.	No	No	No; no.
No; houses are placarded and children kept from school.	No cases	No	No; no.
Yes; by quarantine; no hospital.	No; had no cases	No; by attending physician.	No; no.
House quarantined	No	Yes	No.
Yes; house placarded	Not used yet	Yes	No; no.
Under supervision of M.H.O.	Yes	Yes	No.
No cases	No cases	No contagious diseases	No.
No		No cases	No; no.
No		No; under supervision of M. H. O.	No; no.
No hospital			No.
By placarding	Yes, results satisfactorily	Yes	No: no.
No		No	No.
House placarded. No hospital.		No	No.
	Not required	No cases	Children vaccinated at home.
Isolated in house	Always used with gratifying results.	No	No; no.
	No		No.
No: not systematically	Yes	Yes	No.

VILLAGES.—*Concluded.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If wells, state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred? and state whether the tuberculine test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by an officer of the Board?
Stirling	No	Wells	No; no	None
Stayner	No	Wells, 12 or 15 ft	No	None
Stouffville	Yes	Wells, 20 ft	No	Two; no; fed to hogs; no.
Southampton	Yes	Wells	No; no	Two
Teeswater	Yes	Wells, 20 to 50 ft	Dairy cows inspected; no cases of tuberculosis.	None
Tara	No	Wells, 25 to 30 feet	No; no	One; yes; buried; no.
Tilbury	Yes	Wells	No	None
Tottenham	Yes	Wells, 10 to 14 feet	No; no	One; no; safe distance; no.
Tiverton	No	Wells	No; no	None; no
Vienna		Wells, 16 feet	No; no; no	Two; not used
Watford	Yes	Wells, 22 to 100 feet	No; no	None
Waterford	No	Wells, 50 feet.	No; no	None
Woodville	No	Wells, 20 feet deep	No; no	None; no
Woodbridge	Yes	Wells, 40 feet	No; no	Two; permit to slaughter if kept in sanitary condition.
Weston	M. H. O. only	Wells	No; no; no	Six; kept clean under inspection.
Wroxeter	No	Wells	No	None
Winchester	Yes	Wells	No	None

VILLAGES.—*Concluded.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	None	No.
No	No	None	No.
No	No	None	No.
			No.
The Board is trying to have the dry earth system established.	No	None	No
No	No	None	No.
No	No	None	No.
No	No	None	No.
No	No	None	No.
None	No	No	No.
Yes; garbage 50c. per bbl.; night soil 75c. per bbl.	No	None	No.
Night soil removed once a year, in the spring.	No	None	No.
No	No	None	No.
Attended to by householder	No	None	No.
Individual removal every spring.	None	None	No.
No	No	None	No.
No	No	None	No.

TOWNSHIPS.

Name of municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board?	Contagious diseases.
Alnwick.....	T. C. Lapp, M.D.; James Roberts, Secretary.	Action taken when complaints are made.	Diphtheria, 17 cases, 3 deaths; typhoid, 3 cases; tuberculosis, 3 cases.
Albermarle	No M.H.O.; C. E. Whicher, Secretary.	Action taken when complaint is made.	None .....
Arran.....	T. J. McNally, M. D.; James M. Monkman, Secretary.	Action is taken when complaint of nuisance is made.	Scarlatina, 2 cases; diphtheria, 6 cases; typhoid, 6 cases; tuberculosis, 1 case, 1 death.
Adolphustown..	— Young, M.D.; R. Dorland, Secretary.	Action taken only when complaint is made.	None ....
Armour.....	William Crawford, M.D.; Alex. Mackie, Secretary.	When complaint is made to Board.	Diphtheria, 1 case, 1 death; tuberculosis, 1 case, 1 death.
Alfred	A. A. Gibault; James Brisbois, Secretary.	Only when complaint of nuisance is made to Board	Scarlatina, 10 cases, no deaths; diphtheria, 35 cases, 9 deaths; tuberculosis, 7 deaths.
Arthur	A. J. Reynolds, M. D.; Geo. Cushing, Secretary.	Action taken when complaint is made to Board.	Diphtheria 6 cases, 2 deaths ....
Ashfield.....	F. McLennan, M.D.; W. Stothers, Secretary.	Only when complaint is made.	Scarlatina, 2 cases; diphtheria, 4 cases, 1 death; typhoid, 2 cases, 1 death.
Athol.....	No M. H. O.; W. Moore, Secretary.	No	Tuberculosis, 1 death .....
Ancaster	G. D. Farmer, M. D.; Henry Pim, Secretary.	Yes; no.....	Scarlatina, 1 case; typhoid, 4 cases, 4 deaths; tuberculosis, 5 cases, 5 deaths.
Angorna, S.....	— Galligan, M. D.; Fred McGrath, Secretary.	No general sanitary inspection except when complaint is made to Board.	Scarlatina, about 12 cases; diphtheria, 1 case; typhoid, 1 case.

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Yes; as far as possible in houses.	When used results are good.	Yes	Inspection is made when deemed necessary.
Yes; when necessary	Think it is	Yes	No
Yes; placing patients in separate rooms.	No	Yes	Yes; no
Would be if necessary	No cases	An officer if necessary	No; no
Houses placarded and visitors strictly prohibited.	Yes	Yes	No
Isolation made in private houses.	Yes; with good results in every case.	Yes	No; no
No hospital	Cannot give any report	No	Yes; no
No	Four cases of diphtheria, 1 died, 3 recovered, as they were treated with anti-toxine.	Yes	No
No	No occasion to use it	Yes	No
No hospital, but as complete isolation as possible.	It has been used in several cases with good results.	Under attending physician.	No
No; no hospital	Yes; good results	No	No; no

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Alnwick	No	Wells; generally about 25 feet.	No; no	One; offal is fed to hogs
Albermarle	Yes	Largely springs, some wells.	No	None
Arran	Yes	Wells	No inspection; no tuberculosis.	Two; offal is supposed to be cooked and fed to hogs.
Adolphustown	No	Wells	No	One; not licensed
Armour	No	Wells	No	Two; not licensed
Alfred	No	Wells; about 12 feet	No	Three; yes; buried
Arthur	Yes.	Wells; from 15 to 20 feet deep.	No	Two
Ashfield	No	Wells; 20 to 40 feet	No	Two
Athol	No	Wells	No	
Ancaster	Yes	Wells; from 30 to 60 feet deep.	Yes; no	Four or five; none licensed; are inspected and kept in good condition
Angoria, S	Yes	Wells; about 30 feet.	No	None

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made? How is cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No systematic removal....	None.....	None.....	No.
No	No	None..... .	No.
No	No	None.....	None.
Every person looks after his own.	No	....	No.
No	No	No	No.
No	No	None.....	No.
None.....	None.....	None.	No
No	No	None.....	No.
No	No	. ...	No.
No	None.....	None except night soil and slaughter houses; all are rigidly inspected	None.
No	No	None.....	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Assignack and Manitowaning	No M.H.O.; A. W. McLeod, Secretary.	General inspection at intervals during the year.	Tuberculosis, 1 case, 1 death ....
Amabel	— Campbell, M.D.; R. H. Murray. Secretary.	Yes; repeated.....	Scarlatina, 3 cases; diphtheria, 4 cases; typhoid, 5 cases; tuberculosis, 5 deaths.
Aldborough	S. M. Dorland, M.D.; E. A. Hugill, Secretary.	Yes; yes; also when complaint is made.	Scarlatina, 7 cases, 3 deaths; diphtheria. 36 cases, 1 death - typhoid, 5 cases, 1 death; tuberculosis, 6 cases, 6 deaths.
Ameliasburg ...	A. J. File, M.D.; F. S. Farncombe, M.D.; T. H. Thornton, M.D.; James Benson, Secretary.	Yes, as regards cheese factories, creameries and slaughter houses, and action taken when complaint is made.	Typhoid, 2 cases; tuberculosis, 7 cases, 6 deaths.
Augusta.....	W. H. Waddell, M.D; J. W. Place, Secretary.	No; only when complaint is made.	Tuberculosis, 3 cases, 3 deaths...
Adelaide	F. J. Baleman, M.D.; Chas. Clifford, Secretary.	General inspection.....	Diphtheria, 12 cases, 1 death....
Anderdon	T. J. Park; A. C. Millcux, Secretary.	Only when complaint is made.	Diphtheria, 2 cases, 1 death; tuberculosis, 4 cases. 4 deaths.
Admaston	A. J. Spalling, M.D.; J. Connolly, Secretary.	Only when complaint is made.	Tuberculosis, 3 deaths .....
Barton	———; H. Bryant, Secretary.	Occasional inspection....	None ....
Balfour	—— Howie, M.D.; R. J. Groulx, Secretary.	General inspection made every spring.	None ....
Bangor, Wicklow and McClure.	G. G. Membrey, M.D.; D. Card, Secretary.	No; left to M.H.O	Scarlatina, 1 death; tuberculosis, 1 death.

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Isolated in private or vacant dwellings.	Yes; when required....	Yes.....	No .....
All isolated	Yes	Yes..... .	No; no .....
Yes; house placarded, inmates quarantined; no hospital.	Yes; results favorable..	Yes.....	Yes; no .....
Yes	Yes	Yes.....	No; no .....
Yes, in all cases; no hospital	Cannot say..... ...	Yes	No; no .....
Yes; no hospital	No	Yes	Eleven schools.....
....	....	Yes	No .....
House placarded, and if necessary a person appointed to procure medicines and other necessaries.	Yes; with good results..	Not always.....	No ....
No occasion	No cases of diphtheria ..	.....	No .....
.....	No	.. ..	No .....
No	Don't know	No	No; no .....

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board.
Assignack and Manitowaning	None.....	Mostly surface water....	None.....	Two; no; offal boiled and fed to hogs.
Amabel	No; none supplied.	Wells; 18 feet deep.....	No; no; no tuberculine tests.	Three; no..... .....
Aldborough	No	Wells	No; no	Four; no; offal destroyed by owners.
Ameliasburg....	Yes	Wells	No; no	Three; yes; buried; no.
Augusta.....	No	Wells	.....	Two; not licensed; offal fed to hogs.
Adelaide	.....	.....	.....	.....
Anderdon	No	.....	No	None.....
Admaston.....	.....	Wells; about 10 feet....	No; none; no.....	None.....
Barton	No	Wells, from 10 to 20 feet.	Yes; no cases of tuberculosis.	Twelve; not licensed; offal fed to hogs.
Balfour	No	Chelmsford ..eek	No	None.....
Bangor, Wicklow, and McClure.	No	Wells and springs	No; no; no tuberculin test.	One; offal fed to hogs.

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers.	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, any results of same.
Mostly drawn away and burned.	one	None	No.
No	No	None	None.
Yes; cost paid by owner or occupant of premises.	No	None	No.
	No	None	No.
	No	None	No.
		None	No.
No	No	None	No.
No	No	None	None.
No	No	None	None.
No	No	None	No.
No	No	None	No.

TOWNSHIPS.—*Continued.*

Name of municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board?	Contagious diseases.
Bagot and Blythfield.	—— Bourne, M. D.; M. Ryan, Secretary.	No	Scarlatina, one case; 1 tuberculosis case, 1 death.
Bosanquet.....	H. S. Clarke, M.D.; Geo. Sutherland, Secretary.	General sanitary inspection	Scarlatina, a few cases, tuberculosis, several cases, 4 deaths.
Bedford.....	Wm. Parker, M.D.; Jas. McNeil, Secretary.	Inspection only when complaint is made.	None ....
Blandford.....	E. Bromley, M.D.; Edward Wilson, Secretary.	No; only when complaint is made.	None ..... .
Blenheim .. .	J. A. Mitchell, M.D.; F. M. Ainslie, Secretary.	Yes, so far as slaughter houses, cheese factories and school houses are concerned; action taken when complaint is made.	Scarlatina, 2 cases; diphtheria, 6; typhoid, 3 cases; tuberculosis, 5 deaths.
Burleigh and A.	A. Bell, M.D.; R. W. C. Shewin, Secretary.	Only on complaint.....	Diphtheria, 6 cases, 2 deaths; tuberculosis, 2 cases, 2 deaths.
Burpee	Joseph Johnston, M. D.; Isaac Campbell, Secretary.	Action taken when complaint of nuisance is made	None ....
Bonfield.....	M. James, M.D.; Louis Manseau, Secretary.	Yes; action taken only when complaint is made to Board.	Scarlatina, 10 cases, 1 death; diphtheria, 2 cases; typhoid, 5 cases.
Biddulph	H. Lang, M.D.; W. D. Stanley, Secretary.	Only when complaint is made.	Diphtheria, 1 case, 1 death; typhoid, 4 cases, 1 death; tuberculosis, 1 case, 1 death.
Beverly	J. T. Manes, M. D.; Wallace McDonald, Secretary.	Action taken only when complaint is made.	Scarlatina, 21 cases, 1 death; diphtheria, 1 case; typhoid, cannot give number; tuberculosis, 8 cases, 8 deaths.
Bentinck	————————; Duncan Campbell, Secretary.	Yes, and at stated times when called upon.	Diphtheria, 1 case .....

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
No	Don't know	Yes	No; no
Yes	No; no		No; no
Not required this year	No cases in two years	Yes, by sanitary inspector.	No; no
Yes; placarded; no hospital	None required	Fairly	No; no
Yes; patients are confined to one room, family excluded; no hospital.	In most cases; results favorable.	Under their orders, but not under their personal supervision.	
Yes; no hospital; isolation of houses by placarding.	No; has been used to advantage.	Yes, always	No; no
No hospital; no diseases	No; no		No
No; patients isolated in their houses.	Yes; results favorable	Yes	No; no
Yes, by placarding	Yes; not enough cases to report.	No	No; no
Isolation as strictly as possible is carried out in the houses.	Only one case for the year.	Not always	No; no
Yes; premises isolated; no hospital.	No report	Yes	No

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state the usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Bagot and Blithfield.	No	Wells, 10 to 18 feet deep.	Don't know	Two; no.....
Bosanquet	No	One.....	....	Two; offal fed to hogs.
Belford.....	No	Wells, about 6 feet deep.	No; no cases of tuberculosis.	None .....
Blandford.....	No	Wells generally, from 20 to 36 feet.	No; yes; no	Six; no; cannot say; no
Blenheim	No; reports are supplied physician.	Wells, from 15 to 40 feet	No; no cases	Three; no; offal generally fed to hogs; no.
Burleigh and A.	No	Wells and a few springs. 10 feet.	No; no	None; no .....
Burpee	No	Wells, 8 feet deep	No; no	None.....
Bonfield..	No	Wells	No	One; no; no.....
Biddulph	No	Wells, 25 to 30 feet.....	No; don't know of any.	Two; no; offal fed to pigs; no.
Beverly	Yes	Wells	No; no tuberculosis.	Three; no licenses; offal is buried; no inspection of carcasses by any officers of board.
Bentinck	Yes	Wells	No	Two, not licensed; no inspection of carcasses.

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made? How is cost calculated?	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	None	No.
			None.
School closets are well looked after.	No	None	None.
No	No	None	No.
No	No	None	No.
Done by householders; usually buried.	No	None	No.
	No		No.
Each person removes his own.	No	None	No.
No	No	None	No.
No	No	Nne	None.
No	No	No	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Brighton	N. B. H. Dean, M.D.; Darius Crouter, Secretary.	Not general	Scarlatina, 8 cases, 1 death; diphtheria, 1 case; typhoid, 10 cases; tuberculosis, 6 deaths.
Brantford	C. D. Chapin, M.D.; R. M. Wilson, Secretary.	Action taken only when complaint of nuisance is made.	Typhoid, 15 cases, 1 death; tuberculosis, 3 cases, 3 deaths.
Blanshard	H. K. Ferguson, M.D.; John Jamieson, Secretary.	Yes; no; yes.....	Diphtheria, 1 case: typhoid, 8 cases; tuberculosis, 20 cases; about 3 deaths.
Brock	McDermott & Jardine, M. D's.; Thos. H. Walshe Secretary.	Yes; once a year and when complaints are made.	Tuberculosis, 4 deaths .....
Bexley	Chas. N. Laurie, M. D; Alfred Taylor, Secretary.	No; no; only when complaint is made.	Diphtheria, 4 cases, 1 death ....
Bertie	N. Brewster and A. H. Kilman, Secretary.	Yes, one annually, after which action is taken on complaint.	Scarlatina, 8 cases; diphtheria, 25 cases, 5 deaths; typhoid, 21 cases, 1 death; tuberculosis, 2 cases, 2 deaths.
Burgess, N	No M.H.O.; P. McFarland Secretary.	None	None .....
Bromley	A. J. Sparling, M.D; Patrick Hart, Secretary.	....	Scarlatina, 12 cases, 1 death; diphtheria. 10 cases, 2 deaths.
Burford	Robt. Harbottle, M. D.; Phillip Kelly, Secretary.	No; only upon complaint .	Scarlatina, 1 case; diphtheria, 3 cases; typhoid, 1 case; tuberculosis, 4 cases; measles, 3 cases, whooping cough 3 cases.
Brooke	A. McKinnon, M.D.; W. G. Willoughby, Secretary.	Only upon complaint.....	.. ..
Brant.....	A. B. Taylor, M.D.; J. H. Cannon, Secretary.	General inspection yearly in May, and when complaint is made.	Two families reported to have diphtheria; no deaths reported.
Brougham	B. G. Connolly, M.D.; M. Sheedy, Secretary.	When complaint is made only.	Scarlatina, 11 cases .....

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Isolated in house; no hospital.	Not used	Yes, under M.H. O.	No; no
As far as possible; patients sometimes sent to hospital in Brantford city.	Don't know	Yes	No
Yes; houses placarded; inmates not allowed to mingle with the public.	Yes; results satisfactory	Yes	Yes; no
Only partially; houses placarded.	Yes	Only in some cases	Yes; yes
Yes, houses placarded and watched by an officer; no hospital.	Not used yet	Yes	No; no
Isolation by M.H.O.	Not used this year	Yes	No; no
Isolation carried out	Yes; results very satisfactory.	No	No; no
This work is exceptionally well done in this township.		No	No; no
Not systematically, no hospital.	Do not know	No; under the care of the physician in charge.	No; no
Placarded by order M.H.O.; no isolation hospital.	No	Attending physician or M. H. O. notify sanitary inspector who disinfects and removes placard.	Don't know
Yes; no hospital		Yes	Yes

TOWNSHIPS —*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board.
Brighton	Have been supplied in the past.	Wells and some cisterns.	No; no cases of tuberculosis.	Three, not licensed; offal fed to hogs; no systematic inspection.
Brantford	No	Wells	No; no cases of tuberulosis	Five or six, not licensed, but are kept in sanitary condition; no inspection of carcasses.
Blanshard	Yes	Wells, 15 to 40 feet	No; yes; yes	Three, not licensed; burned or buried; no
Brock	Yes	Wells, 20 to 30 feet.....	No	One; inspector examines and reports to board.
Bexley	No	Wells, 25 feet	No; no	One; no .....
Bertie.....	No	Wells 20 to 80 feet.....	No inspection; no tuberculosis.	Six local butchers; not licensed; offal is fed to hogs.
Burgess, N.....	.....	Wells 20 feet	None	None .....
Bromley	No	Wells and springs	None	No .....
Burford	No form for teachers.	Wells, springs and cisterns.	No; yes.....	Offal fed to pigs .....
Brooke	No	Wells and springs 10 to 25 feet.	No; no tests.....	One slaughter house; offal buried.
Brant	.....	Chiefly wells; water good.	....	....
Brougham.....	No	Creeks	No; no	None.....

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made. How is cost calculated?	Is there a public sewerage system? If so what proportion of houses of whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	No	No.
No	None	None	No.
No	No	None	No.
No	No	None	No.
No	No	None	No.
None	No	None	No.
No	No	None	No.
No	No	None	No.
No	No	Slaughter houses	No.
No	No		No.
No; no	No	No	No.
No	None	None	No.

TOWNSHIPS —*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year?, or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Caldwell	No M.H.O.; O. Lafrance, Secretary.	None	
Cardwell	J. P. Waddy, M.D.; M. Wilson, Secretary.	Only when complaint is made.	None
Caradoc	M. Rice, M. D.; Chas. Lockwood, Secretary.	Yes; yes	Typhoid, 4 cases; tuberculosis, 2 cases.
Carlow	No M. H. O.; W. C. Parkhurst, Secretary.	No	None
Carling	No M.H.O.; Jas. Crerar, Secretary.		None
Carden	No M.H.O.; John Walsh, Secretary.	Action taken only when complaint is made to Board.	None
Cardiff	Chas. Knox, M.D.; A. W. Willis, Secretary.	Only in case of complaint being made.	None
Caistor	R. H. De Lamatter, M.D.; W. G. Warren, Secretary.	Yes	Diphtheria, 9 cases, 3 deaths; tuberculosis, 5 cases, 5 deaths.
Caledon	James Algie, M. D.; D. Kirkwood, Secretary.	Action taken on nuisance only.	Scarlatina, 8 cases; diphtheria, 4 cases; typhoid, 4 cases.
Canborough	A. M. Clark, M.D.; J. W. Paget, Secretary.	Action taken only when complaint is made.	Diphtheria, 19 cases, 4 deaths
Calvin	M. James, M. D.; W. T. Gale, Secretary.	Action taken	None
Cavan	Geo. Soothern, Secretary.	No; no; yes	Tuberculosis, 2 cases, 2 deaths

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results in treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
....	....	....	No ....
Isolated in home; no hospital.	Not procurable when required.	Yes	Inspection of schools carried out.
Yes	Yes; very favorable	Yes	No; no .....
No	No	No	No .....
....	.....	.....	No .....
Yes; no hospital	No; some physicians would not recommend it.	Yes	No .....
No occasion	No	Yes	No .....
Yes, by placarding; no hospital.	No	Yes	No; no .....
Yes, by placarding and sanitary police when necessary; no hospital.	Not in common use....	Not always, but in several cases under supervision of M.H.O.	No; no .....
Isolated as much as possible in the house; no hospital.	Yes; very satisfactory..	In nearly every case	No; no .....
None required....	None	When necessary	No; no ....
Yes, removed to hospital in Peterborough.	No occasion	Yes	No; no .....

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases, supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred? and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Caldwell	Yes	Wells 12 feet	No inspection	None
Cardwell	No	Springs	No	None
Caradoc	No	Wells 16 feet	No; no; no test	Two; yes by burying and feeding.
Carloss	No	Wells 20 feet	No	None
Carling	No		No	None
Carden	No	Wells 15 to 30 feet	No; no	None; no
Cardiff	No	Creeks	No	None
Caistor	Yes	Wells 12 to 15 feet	No	Five; no; in good sanitary condition.
Caledon	Yes	Wells	No; can't say	Seven; inspection on complaint being made
Canborough	No	Chiefly from cisterns	No	No licensed slaughter-houses.
Calvin	No	Wells 5 to 10 feet	No	None
Cavan	Yes	Wells 30 feet	No	Two; no; cannot say; no.

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers?	State No. and kinds of noxious trades, (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during year under Public Health Act? State in detail the nature of the case, and results of same.
None	None	None	None.
No	No	None	No.
No	No	None	No.
No	None	None	No.
No		None	No.
No	No	None	No.
	No	None	No.
By householders	No	None	No.
No	No	Tannery; kept in sanitary condition.	No.
No	No	None	No.
No	No	None	No.
No	No	Two cheese factories, two slaughter houses; not licensed.	No.

TOWNSHIPS—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Carrick	R. E. Clapp, M. D.; C. Schurter, Secretary.	Yes; villages in township inspected once or twice a year, and when complaint of nuisance is made.	Scarlatina, 1 case; diphtheria 2 cases; typhoid, 2 cases, 2 deaths.
Carnarvon.....	F. R. R. Berry, M. D.; Wm. Vincer, Secretary.	No	None .....
Cartwright	No M.H.O.; Wm. Lucas, Secretary.	General inspection once a year and when complaint is made.	None ....
Chaffey	H. L. Howland, M. D.; Wm. Clarke, Secretary.	Only on complaint.....	None .....
Christie	A. P. Waddy, M.D.; Wells Thompson, Secretary.	Only on complaint.....	None .....
Chapman.....	P. D. Tyerman, M. D.; Joseph Wilson, Secretary.	Yes, twice a year and action taken when complaint of nuisance.	Tuberculosis, 1 case, 1 death ....
Charlottenburgh	A. Falkner, M.D.; G. H. McGillivray, Secretary.	Action only when complaint of nuisance is made.	Diphtheria, 15 or 20 cases, 3 deaths; typhoid, 3 cases; tuberculosis, 8 or 10 cases, 2 deaths.
Charlotteville ..	W. J. McInnes, M. D.; John Machon, Secretary.	Only when complaint is made to Board.	Tuberculosis, 4 cases, 4 deaths...
Claredon and Miller.	No M.H.O.; R. W. Wood, Secretary.	No	None ....
Cockburn Isl'd..	No M.H.O.; A. Monck, Secretary.	No	None .....
Clarke	No M.H.O.; John Rickaby, Secretary.	Schools, cheese factories and slaughter houses, and when complaints are made.	Scarlatina, 1 case; typhoid, 1 case.

TOWNSHIPS—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
No	No	No	Yes; no
Yes	No	Yes	No
Systematically carried out	Don't know.	Yes	No; no
By placarding; no hospital	No occasion to use it	Under the supervision of M.H.O.	No; no
Houses placarded	Don't know.	Yes	No; no
Patients isolated in their homes.	No occasion to use it	Yes	Yes; no.
Yes, in separate rooms; no hospital.	Yes; good	Yes, generally	No
By isolation; no hospital	Not generally used; when used, results good.	Yes	No
	No cases		No
No	No		No
As reported by physicians it is.	No cases	Physician attending looks after this.	Yes.; yes

TOWNSHIPS—*Continued.*

Name of Municipalities.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water-bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occured? and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the board?
Carrick	No	Wells	No; don't know; no.	Three; yes; buried
Carnarvon	No	Wells	No	None
Cartwright	No	Wells generally 24 feet	No; no	None
Chaffey	No	Wells and springs	No	Three; offal is boiled on the premises.
Christie	No	Wells and springs	No inspection; no cases.	One; no license
Chapman	No	Wells and springs.	No; no	None
Charlottenburgh	No	Generally wells 4 to 30 feet.	No inspection; tuberculine test only used in thoroughbred stock.	Two; not licensed
Charlotteville	Yes	Wells	No; none	Don't know
Claredon and Miller.	Yes	Wells 12 feet	No	
Cockburn Isl'd.	No	Wells and streams	No	None
Clarke	To physicians	Wells and springs	No; no	Three; no

TOWNSHIPS—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is cost calculated?	Is there a public sewerage system? If so, what proportion of houses of whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	None	No.
No	No	None	No.
No	No	None	No.
No	No	None	No.
Each householder removes his own.	No	None	No.
Yes	None	None	None.
Not systematically, but generally well attended to.	No	None	No.
None	No	None	No.
			No.
No	No	None	No.
No	No	None	Yes; one party fined $5 for keeping hogs on cheese factory premises.

TOWNSHIPS —*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Colchester, S ...	W. J. Campeau, M. D.; Joseph Drummond, Secretary.	Action taken when complaint is made.	Scarlatina, 50 cases; typhoid, 1 case. 1 death; tuberculosis, 6 deaths.
Colborne	—— Taylor, M.D.; F. W. McDonagh, Secretary.	Only when complaint is made.	Tuberculosis, 1 case..... ..
Colchester, N...	James Brein, M.D.; J. A. Coulter, Secretary.	When any complaint is made.	Tuberculosis, 4 cases..... ..
Cramahe	No M.H.O.; R. B. Watt, Secretary.	No complaints made to Board.	Scarlatina, 1 case, 1 death; typhoid, 2 cases; tuberculosis, 1 case.
Crosby, S	D. A. Coon, M.D.; J. R. Dargavel, Secretary.	No inspection, only on complaint being made.	None ....
Culross..... ..	—— Gillies, M.D.; Chas. Button, Secretary.	Some inspection made.....	Very few cases, one or two deaths from consumption.
Cumberland	James Ferguson, M.D.; H. W. Dunning, Secretary.	Only when complaint is made.	Diphtheria, 3 deaths..... ...
Cornwall	H. J. Harrison, M.D.; J. A. Mullin, Secretary.	Only upon complaint, except in case of slaughter houses. These are inspected at regular intervals.	Scarlatina, 12 cases, 2 deaths; diphtheria, 10 cases, 3 deaths.
Clarence	N. Desrosers, M.D.; Joseph Minard, Secretary.	When complaint is made..	Typhoid, 5 cases; tuberculosis, 5 cases, 2 deaths.
Cambridge	F. M. Puras, M.D.; J. B. Sauche, Secretary.	General inspection.....	Diphtheria, 7 cases .....
Crowland	Dr. Glasgow; W. H. Biggar, Secretary.	Action taken on complaint.	Diphtheria, 1 case, recovered ...

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is Diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
No	No	No	No
No	Think so	Yes	No; no
Placarding, etc	Don't know	Yes	No
Yes; houses placarded; no hospital.	Yes; no cases exist	Yes	No
No	Cannot say	No contagious diseases	No; no
			No
By placarding	Two cases treated with anti-toxine, one successful, one died.	Yes	No; no
Isolated as far as possible at patient's houses. Houses placarded. Inmates are kept from mingling with the public or attending school.	Yes, very general good results. Had a very severe type of diphtheria this year, and all physicians seem to be loud in praise of anti-toxine.	No; usually under the attending physician.	No
No	No	Yes	No
No	Sometimes used	Yes	No
As far as possible; no isolation hospital.	Don't know	Has not been necessary	No; no

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used?	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Colchester, S...	No	Wells from 8 to 30 feet..	No	One ; no ; fed to hogs..
Colborne	No	Wells, 30 to 50 feet	No ; no	None..... ..
Colchester, N...	No	Wells, from 60 to 100 feet.	No ; heard of none .	None.....
Cramahe	Yes	Wells, about 20 feet	No ; no cases of tuberculosis.	Two ; yes ; given to hogs ; yes.
Crosby, S.....	No	Wells	No ; none reported..	Two ; no inspection....
Culross	Not required....	Wells, 20 to 60 feet	.....	Three or four for the use of farmers ; offal is used as manure.
Cumberland ...	No	Wells	No	Two ; no license.....
Cornwall	No	Wells	No	Three ; no ; buried and partly fed to hogs.
Clarence	Yes	Wells, 20 feet.....	No	Five ; no.....
Cambridge	No	Wells	No ; no	Three slaughter houses ; no license.
Crowland	Cannot say.....	Wells, generally about 30 feet.	No ; no	None ; no..... .....

TOWNSHIPS —*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made? How is cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	None	No.
Don't think so; no	None	None	No.
No	No		None.
No	No	None	No.
No	No	None	No.
			No.
None	No	None	No.
No	No	One; slaughtering of animals; no license.	One party fined for keeping a dumping ground.
No	No	None	No.
None	None	None	No.
No			None.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint is made to Board.	Contagious diseases.
Darling	No M.H.O.; Jas. H. Rintoul, Secretary.	Action taken when complaint is made.	Diphtheria, 1 case, 1 death.....
Derby	Chas. G. Barnhart, M. D.; Wm. Beaton, Secretary.	There is a regular sanitary inspection once a year. Action is taken also when complaint is made to Board.	Typhoid, 5 cases.....
Dungannon	Bingamin Spurr, Secretary.	No	Diphtheria, 50 cases .....
Dereham	Jas. K. Creighton, M.D., Henry Marshall, M.D.; Alex. Bell, Secretary.	Cheese factories and slaughter houses are inspected regularly. Other matters inspected only on complaint.	Diphtheria, 4 cases, 1 death; typhoid, 1 case; consumption, 3 cases, 3 deaths.
Dunn	A. G. MacCallum, M.D.; David Lyons, Secretary.	Only when complaint is made to Board.	Diphtheria, 1 case, 1 death.....
Drummond	No M.H.O.; T. B. Moore, Secretary.	None; action taken only on complaint.	None ....
Dysart	Wm. Giles, M. D.; W. Prust, Secretary.	No	None ....
Douro	J. K. Fraser, M.D.; Wm. O'Brien, Secretary.	Only when complaint is made to the Board.	Tuberculosis, 1 case, 1 death ....
Darlington	J. C. Mitchell, M. D.; R. Windatt, Secretary.	Once in the spring.....	Diphtheria, 2 cases; typhoid, 5 cases; tuberculosis, 6 cases.
Dawn	D. Galbraith, M.D.; J. M. Webster, Secretary.	No; action only on complaint.	Scarlatina, 1 case; diphtheria, 1 case; typhoid, 2 cases, 1 death.
Denbigh, Abinger and Ashby.	Chas. D. Doig, M. D.; Paul Stein, Secretary.	No; only when complaint is made.	None .....

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is Diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
All communication with the public strictly prohibited by notice.	No	Yes.	No ....
Yes; by placard; no isolation hospital.	Don't know.....	No	Yes, once a year; no....
Yes; houses are placarded, all persons kept in and no outsiders allowed to enter. No isolation hospital has been opened.	No	Yes.	No .....
Isolation as far as can be adopted under circumstances; no hospital.	Anti-toxine is used in serious cases, results satisfactory.	No	No; no .....
Yes; no hospital.....	Yes, I believe it is very effective.	No	No; no ....
None	None	No	No .....
None	....	....	No; no .....
No; isolated in private room in their own house.	No	Yes	No; no .....
There has been no occasion; no hospital exists.	....	Yes.	No; no ....
Only as directed by physician in attendance; no hospital.	Have not heard of such being used.	No	No .....
It would be if any should occur.	....	It would be if required .	No ....

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughterhouses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Darling	No	From surface springs	No	None
Derby	No	Wells and springs, usual depth of wells between 15 and 20 feet.	No inspection of dairy cows: no cases of tuberculosis; no tuberculine used.	Three; yes; don't know how offal is disposed of; no inspection of carcasses.
Dungannon	No	Wells, about 12 feet	No	None
Dereham	Yes	Wells in all cases, probably 20 feet.	No; no	Four; licensed; offal consumed by swine; no inspection of carcasses.
Dunn	No	Stoned up cistern with troughs from roof, 16 feet deep.	No; no	No slaughter houses
Drummond	Yes	Wells bored in the rock; no fever.		Three slaughter houses; offal fed to swine; no licenses; no inspection.
Dysart		Wells	No; no	None; no
Douro	Yes	Wells, 20 feet	No; no	Three; no; don't know; no.
Darlington	Not to teachers.	Wells, from 20 to 25 feet.	No; none reported.	Four; no license; kept in good condition; buried; no.
Dawn	No	Wells, depths from 18 to 90 feet.	No; no	None
Denbigh, Abinger and Ashby.	No	Wells or springs from 5 to 15 feet.	No; no	None

TOWNSHIPS —*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewerr.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	None	No.
No	No	None	None.
No	No	None	No.
No	No	No noxious trades except slaughter houses; licensed annually.	None.
No	No	None	No.
No	No	None	None.
No	No	None	No.
No	No	Three slaughter houses; no action taken in the matter.	No.
No	No	None	No.
No	No	None; only one cheese factory and a few saw mills in the township.	No.
There is not	There is none	We have none	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it reported at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Draper	S. Brigland, M.D.; David Cairns, Secretary.	.....	Diphtheria, 1 case ....
Dalhousie and N. Sherbrooke.	A. Downing, M.D.; Walter Geddes, Secretary.	No; only when complaint is made.	Tuberculosis, 2 cases, 2 deaths...
Dorchester, N	A. Graham, M.D.; W. B. Lane, Secretary.	....	Diphtheria, 20 cases, 2 deaths; typhoid, 3 cases.
Dummer	—— Couch, M. D.; J. B. James, Secretary.	Action taken only when complaint of nuisance is made to the Board.	Tuberculosis, 1 death .....
Dumfries, S	J. S. Addison, M.D.; Wm. Fleming, Secretary.	Yes; yes.....	Diphtheria, 1 case .....
Dunnett, etc....	H. Irwin, M.D.; F. B. Warren, Secretary.	Yes; twice a year	Diphtheria, 2 cases, 1 death; typhoid, 2 cases.
Dawson, Robertson, etc.	No M. H. O.; John S. Hawkins, Secretary.	No; no; no.....	None ....
Dumfries, N....	A. Thomson, M. D.; Jos. Wrigley, Secretary.	Yes, of slaughter houses and cheese factories.	Typhoid, 4 cases, no deaths .....
Eramosa	G. F. McCullough, M.D.; Hugh Black, Secretary.	....	Scarlatina, 3 cases; diphtheria, 1 case: typhoid, 2 cases; consumption, 1 case.
Etobicoke	J. M. Cotton, M .D.; A. Macpherson, Secretary.	By direction of Board when necessary.	Scarlatina, 5 families, 2 deaths; diphtheria, 3 families.
Esquesing.....	G. H. Kennedy, Secretary.	The Inspector makes an annual inspection on 1st May each year.	Scarlatina, 3 cases; diphtheria, 1 case.

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results in treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
The case of diphtheria was isolated from any visitor of any kind; no hospital.	None	Yes	No
Yes; house isolated and some one employed to take charge; no hospitals.	No; have no cases this year.	No; just under his instructions.	No; no
Yes; isolation and disinfection; no.	Yes; used in 20 cases, 18 recovered, 2 died of paralysis of heart 10 days after.	Yes	No; no
Yes; house placarded	Yes; results good	Yes	No; no
Yes; all communication with the family strictly forbidden; house placarded; no hospital.	No	Not always; generally left to the physician in attendance.	Yes; no
Yes; as far as possible in their own houses.	Anti-toxine not used in above cases.	Yes	Has not done so yet
No	No diphtheria as yet	No Board; when Dr. Johnson attends a patient, yes.	No
No isolation hospital; cases sent to General Hospital, Galt.	Yes; no diphtheria reported.	Yes	No; no
As far as possible; no hospital.	Yes; in the one case reported; successfully treated with anti-toxine.	No; only when complaint is made inspection is made.	
Isolation carried out under direction of Board.	Anti-toxine was used with good results in two cases.	Under direction of M.H.O. and physician in attendance.	No; no
	Don't know; used in one case, results good.	No	Public school inspector looks after that.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Draper	Yes..... ...	Wells.....	There is no inspection required of dairy cows as there is no such disease here.	None.....
Dalhousie and. N Sherbrooke.	No	Wells and springs from 12 to 20 feet.	No; no	Four; no license; buried; no.
Dorchester, N ..	No	Wells, 40 feet.....	No; no	Six; yes; cooked and fed to hogs.
Dummer	Yes.....	Wells, 20 feet.....	No; no	Three slaughter houses; no; buried; no.
Dumfries, S	Yes.....	Wells, from 6 to 20 feet .	Yes; no.....	Two; yes; ordered to be buried or burned; no.
Dunnett, etc....	No	Wells and springs, 25 to 30 feet.	No	None.... .....
Dawson, Robertson, etc.	None	Wells and lake	No	None .....
Dumfries, N....	No	Springs	Yes.....	Nine slaughter houses; yes; boiled and fed to hogs.
Eramosa	Yes.....	Wells, about 30 feet	No.....	Two; not licensed; inspected if complaint is made; offal cooked and fed to animals.
Etobicoke	No.....	Wells, from 20 to 35 feet.	No; one case so far as I have heard of on a dairy farm; no report made to the Board.	Ten or twelve; not licensed; no systematic inspection.
Esquesing.....	We have not been called for any.	Wells.....	.. ..	Three; don't know; no.

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated.	Have there been any prosecutions during year under Public Health Act? State in detail the nature of the case, and results of same.
There is none to remove by the Board.	None.....	None.....	None.
No	No	None.....	No.
No	No	None.....	No.
No	No	None.....	No.
No	None.....	No	No.
No; each family looks after its own refuse.	No	None.....	No.
No; no	No; no	None.....	None.
No	No	.....	None
No systematic removal....	No.....	No.....	No.
At Long Branch, garbage and night soil are removed under direction of the M.H.O.	No.	None	No.
None	No.....	One tannery, which has been polluting the Limehouse as reported.	No.

TOWNSHIPS —*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it reported at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Ilderslie	H. McIntyre, Sec	Yes; at repeated intervals every year.	Typhoid, 1 case..... ....
Ennismore	Michael Murray, Sec	....	No contagious diseases for a number of years back.
Egermont	A. L. Brown, M.D.; David Allan, Sec.	No; no: action is taken when complaint is made.	Diphtheria, 1 case; typhoid, 1 case; tuberculosis, 1 case, 1 death.
Emily.....	F. J. Bradd, M.D.; R. J. Grandy, Sec.	Action is taken only on complaint of nuisances to Board.	None .....
Enniskillen.....	Jno. Dunfield, M.D.; Geo. V. Wyant, Sec.	Action on complaint	Diphtheria, 3 cases, 2 deaths; tuberculosis, 1 case, 1 death.
Ekfrid	Dr. L. J. A. Hyttenranch, M.H.O.; H. McFarlane, Sec.	Action taken only on complaint.	Scarlatina, 1 case; diphtheria, 1 case: typhoid, 4 cases, 1 death.
Elma	J. Fullarton, Sec	No; action taken when complaint is made.	Tuberculosis, 2 cases, 2 deaths...
Embro	J. Ross, M.D.; E. Cody, Sec.	General inspection in spring; subsequent inspections when requested on complaint.	None .....
Edwardsburg...	S. C. McLean, M.D.; Jay J. Marsh, Sec.	Only when complaint is made.	Scarlatina, 2 cases; diphtheria, 12 cases, 3 deaths; tuberculosis, 7 cases, 7 deaths.
Ernestown	J. E. Mabee, M.D.; E. O. Clark, Sec.	Only on complaint.....	Typhoid, 5 cases, 1 death, tuberculosis, 2 deaths.
Ellice	J. J. Paul, M.D.; Peter Smith, Sec.	Only when complaint is made.	Diphtheria, 1 case .....

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results in treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Yes; when cases arise	No.....	Yes.....	Yes; vaccination of school children is very generally attended to by the parents.
....	....	....	....
When notified; dwelling is placarded; no hospital.	....	No.....	No.....
Simply isolated in infected dwelling; no isolation hospital.	.....	Yes..... ..	No..... .....
Houses placarded only.....	Yes.....	Yes.....	Schools inspected, but no certificate required.
Yes; patients are isolated in their own houses; also placards are used.	Not enough diphtheria to say; in the one case reported it saved the child's life.	Yes; except in typhoid cases, when it is left to the medical attendant.	No..... ...
Isolation is carried out when any case is known; no hospital.	We do not know of any being used.	Yes.....	No.....
None	None.....	Yes, when such diseases occur.	Only when requested; no certificate issued on vaccination; none issued this year.
Isolation in their houses as well as possible; no hospital.	It is used in most severe cases; it was used in the two fatal cases reported, but not till the disease was far advanced.	Not in all cases	I think not.....
Yes; houses quarantined; no hospital; cases sometimes sent to Kingston isolation hospital.	Yes; treatment nearly always successful.	Yes.	No.....
Yes; the Board is quick to act and isolate when necessary.	We had but one case, it was then successfully used.	Yes; this is invariably done at the expense of the municipality.	They have not done so as yet.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughterhouses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Elderslie	Yes	Wells, 30 to 40 feet	No cases	Three or four; they are inspected by the Board of Health and required to keep premises properly.
Ennismore	Yes	. ...	Never heard of any cases.	None..... ..
Egermont	Forms of contagious diseases are supplied to physicians only.	Wells, from 20 to 30 feet.	No; have not heard of any.	None .....
Emily...	None	Wells, various depths ..	No..... ..	None .....
Enniskillen.....	No forms have been distributed this year.	Water is obtained from the rock at from 50 to 150 feet.	No inspector; no tuberculosis reported.	.....
Ekfrid	Yes.....	Wells, from 12 to 100 feet.	No.....	Four slaughter houses; not licensed; no inspection except on complaint.
Elma	No.....	Wells, from 14 to 100 feet.	....	Four slaughter houses; not licensed; no inspection; no complaints; don't know about offal.
Embro	Yes	Wells, from 25 to 35 feet.	No; no; no.....	Two slaughter houses; offal fed to swine; no inspection.
Edwardsburg...	I think not.....	Wells, 30 to 60 feet	No; no	One; no; no. .....
Ernestown	Yes.....	....	No; no cases or tests.	.....
Ellice	No.....	Wells, from 12 to 35 feet, drilling is now being resorted to.	None; no	Three slaughter houses; kept in good order, butchers are much more particular than formerly.

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage, and night soil? If so on what basis of cost is the removal made? How is cost calculated?	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
....	None	None	None.
.....	None	....	None.
No.....	No..... ...	None	None.
No.....	No.....	None	No.
.....	.....	.....	No.
No.....	....	....	No.
No.....	No.....	None	No.
No, except in school premises; cost, $12 for 180 pupils; dry earth closets.	No.....	None, except slaughter houses, these are viewed by M.H.O. at intervals.	No prosecutions; several minor nuisances abated by notice and warning.
Parties remove their own .	No.....	One slaughter house, kept in good condition.	No.
No.....	No.....	None	No.
.....	.....	.....	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisances is made to Board.	Contagious diseases.
Erin	Thos. Young, Sec	No	None reported
Easthope, S	R. Whiteman, M.D.; V. Stock, Sec.		Tuberculosis, 1 case, 1 death
Elmsley, S	W. T. Pratt, M.D.; Thos. O'Reilly, Sec.		Typhoid, 1 case
Elzevir and Grimsthorpe.	Harper, M.D.; R. W. Miller, Secretary.	Action on complaint	None
Essa	John W. Norris, M.D.; R. Banting, Secretary.		Tuberculosis, 6 cases
Eastnor	L. Brock, M.D.; Chas. W. W. Dalton, Secretary.	Action taken on complaint.	Nil
Elizabethtown	Sharpe, M.D.; John B. Barry, Secretary.	No; when a complaint is made it is looked after; only one complaint this year.	Typhoid, 2 cases, 2 deaths; tuberculosis, 6 deaths.
Eldon	J. F. Ross, M.D.; John A. Jackson, Secretary.	There is no general inspection; action taken only on complaint.	Diphtheria, 2 cases, 1 death; scarlatina, 3 cases; tuberculosis, 1 death.
Fullarton	W. J. Armstrong, M.D.; John Wilson, Sec.	Yes	Tuberculosis, 1 case, 1 death
Floss	J. B. H. McClinton, M.D.; C. S. Burton, Sec.	Action is taken only when complaint is made.	Diphtheria, 7 cases, 1 death; tuberculosis, 6 cases, 6 deaths.
Ferris	J. B. Carruthers, M.D.; M. Nalon, Sec.	Only when complaints are made to the Board.	None

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
No	No	No	Yes
None necessary so far	No	Not required so far	No; no
Isolation in their own houses; no hospital.	None used		I do not think that the Board has made any inspection of the schools.
No	Don't know		No
Not needed	None	None requiring interference of Board.	When notified of any unsanitary premises.
No hospital		No cases this year	Occasional
No	Don't know	Don't think it is	No
No; the house in which the disease exists is placarded.		Yes	No
Yes; placards used; no hospital.	No	Yes	Yes; no
Yes; by placarding thereby preventing communication.	Yes; one death and five recoveries where anti-toxine was used.	Yes	No
Yes	Yes	Yes	No

TOWNSHIPS.—*Continued.*

Name of Municipality	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Erin	No.....	Wells, generally.....	No.....	Two slaughter houses ..
Easthope, S	Yes.....	Wells, from 10 to 40 feet.	No ; one only ; no ..	Three ; no ; mostly fed to pigs or used as manure.
Elmsley, S	.....	Drilled wells through rock from 25 to 40 feet.	None.....	One slaughter house; not licensed, but kept in good condition.
Elzevir and Grimsthorpe.	Yes.....	Wells about 15 feet	No ; no	None.....
Essa	No	Wells mostly	No ; no	Two slaughter houses on a stream ; offal buried ; yes.
Eastnor	.....	Wells ; depths vary at each school ; no general basis.	No regular dairy ; no cases.	Not licensed, but kept at a considerable distance from inhabited dwellings.
Elizabethtown .	No	Wells from 4 to 100 feet.	Tuberculine test has been made at dairies supplying the town of Brockville; no tuberculosis found.	Two that I know of....
Eldon...	No	Wells from 15 to 50 feet.	No inspection	One slaughter house; not licensed ; no inspection.
Fullarton	No	Wells from 15 to 30 feet.	No ; none reported..	Two ; not licensed ; turned into manure ; no inspection of carcases.
Floss	No	Wells about 14 feet	No	Three ; no license has been given ; no.
Ferris.....	No	Wells	No	None.....

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	No	No.
No	No	None	None.
None	None	None	None.
No	No		No.
Yes; private owners are required to remove all noxious smells and keep clean their premises.	No	Butcher; no license	No.
			None.
No	No	None	None.
No	No	One dynamite factory; 1 butcher; not licensed.	None.
No	No	None	No.
No	No	None	No.
No	No	None	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at interval every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Finch	Dr. Marcillus, J. A. Cockburn, Sec.	Action is only taken when complaint is made.	Scarlatina, 6 cases, 1 death; diphtheria, 20 cases, 5 deaths; typhoid, 5 cases; tuberculosis, 1 case, 1 death.
Faraday.....	Dr. Levett, Jas. Siddons, Sec.	.....	Diphtheria, 2 cases, 1 death... ..
Fitzroy	Thos. Wilson, M. D.; A. Murphy, Sec.	Occasional sanitary inspection; when inspection is considered necessary.	Diphtheria, 15 cases, 1 death ....
Flamboro' East.	A. C. Jones, M. D.; J. Bremner, Sec.	No; no; only when complaint is made.	1 typhoid; no death .....
Gordon	Samuel Hall, M. D., and John Nellis, M.D.; Robt. Brett, Sec.	When complaint is made..	None.... . ...
Georgina	C. T. Noble, M.D.; Donald Ego, Sec.	Action taken only when complaint is made.	Diphtheria, 20 cases, 1 death; tuberculosis, 2 deaths.
Glenelg	Jas. Gun, M.D.; John S. Black, Sec.	The township is divided into five divisions for sanitary purposes, and each member of the board looks after his own division.	Scarlatina, 3 cases; diphtheria, 1 case, 1 death.
Goulbourn	G. C. Richardson, M.D., A. Abbott, Sec.	Only when complaint is made.	Scarlatina, 15 cases; diphtheria, 2 cases; typhoid, 3 cases, 2 deaths; tuberculosis, 2 cases, 2 deaths.
Gosfield, S	Wm. McKenzie, M.D.; G. W. Coatsworth, Sec.	Action taken only when complaint of nuisance is made to the board.	Scarlatina, 2 cases; tuberculosis, 1 case, 1 death.
Glanford	Cyrus Smith, M. D.; Wm. Calder, Sec.	Inspection made on complaint and when thought required.	Tuberculosis, 2 deaths..... ....
Grimsby, North.	J. W. Alway, M. D.; W. H. Nelles, Sec.	Action taken only when complaint to board is made.	None.....

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results in treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school-children each year?
Dwellings are placarded and patient isolated in the house; no hospital.	In use by Dr. Marselu- and Dr. Crane; they report good results; lost only one case when it was used at once.	Yes, by the M. H. O....	No .....
Yes; kept in the house and the Sanitary Inspector attends to their wants.	Not used here	Yes...	No .....
Yes; houses placarded; no hospital.	Yes; anti-toxine has proved to be a great benefit.	Yes.....	No; no ... .
Can't say; no isolation hospital.	Cannot say	No	No .....
.....	.....	No.....	No.
Yes; patients isolated in their own houses under supervision of attending physician.	No.....	Yes, or else attending physician.	No; no.
Yes; under direction of physicians attending cases.	No.....	Yes; under direction of physicians attending cases.	No; it has not been found necessary.
Yes; isolated in farm houses.	Yes; good	Yes.....	No; no.
Yes; house quarantined; no hospital.	Have not had a case of diphtheria this year.	Yes	No.
No.....	.....	....	No; no.
Houses placarded; no hospital.	I think antitoxine is used when required.	Yes	No.

TOWNSHIPS —*Continued.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughterhouses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcases by any officer of the Board?
Finch	No	Wells about 25 feet	No	Three small ones; no inspection.
Faraday	No	School water got from wells at different places; no wells at school.	No	None
Fitzroy	Yes	Wells; ranging from 10 to 50 feet.	No; don't know; test has not been used.	One; no; don't know; no.
Flamboro' East	No	Mostly wells, 10 to 20 feet.	No	Four; no license; no
Gordon	No	Wells; about 15 feet	No	No
Georgina	Yes	Wells	No	None.
Glenelg	These have been supplied to physicians and M. H. O. only.	Spring wells	None	None
Goulbourn	No	Wells	No; no; no	None
Gosfield, S	Yes; to M.H.O.	Wells, varying in depth.	None reported	None that I know of
Glanford	Some forms have been supplied to physicians.	Wells	No	There are 7 not licensed, but permitted while in good condition; carcasses not inspected; usually sold in Hamilton.
Grimsby, N	No	Wells; about 20 feet	No	No

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewer.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	None	None.
None	No	None	No.
Yes; each party removes their own garbage; not calculated.	No	None	No.
	No		No
No	No		No.
		None	No.
No	No	None	No.
No	No	None	No.
No	No	None	None.
No	No	None licensed	No.
No	No	None	None.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Garafraxa, East.	Skippen, M. D.; John Preston, Sec.	On complaint of nuisance.	None. ... .
Grattan	M. J. Maloney, M. D.; Wm. Gorman, Sec.	No; no; action only taken when complaint of nuisance is made to board.	None..... .....
Grey.....	Malcolm Ferguson, M.D.; Wm. Spence, Sec.	Action taken only when complaint is made to the board.	Diphtheria, 1 case; tuberculosis, 3 cases, 3 deaths.
Gwillimbury, West...	No M. H. O.; Z. Evans, Sec.	Only when complaint is made.	Diphtheria, a few cases of a mild type; typhoid, 1 case.
Gower, South...	No M. H. O.; Elijah Pelton, Sec.	No regular sanitary inspection; action taken only when complaint is made to board.	None ....
Grantham.....	J. Jessop, M.D.; L. S. Bessy, Sec.	When complaint is made..	Scarlatina, 8 cases, 1 death; tuberculosis, 3 cases, 3 deaths.
Glamorgan	D. Williams, Sec.	When complaint is made..	General freedom from contagious diseases.
Garden Island..	R. W. Garrett, M.D.; Richard Raymond, Sec.	Yes; each half year	Typhoid, 4 cases..... ....
Garafraxa W.. ..	Jas. Dow, M.D.; Jas. Kennedy, Sec.	Yes; repeated at intervals during the year.	Scarlatina, 3 cases; diphtheria, 6 cases.
Gosfield, North..	J. W. Brien, M.D.; Isaac J. Cottam, Sec.	Action taken on complaint to Board.	Scarlatina, 1 case, 1 death; diphtheria, 4 cases, 1 death; typhoid, 3 cases.
Galway and Cavendish.	No M. H. O.; Patrick Collins, Sec.	... .	None ....

TOWNSHIPS.—*Continued*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results in treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Yes; houses placarded and watch appointed.	Never been tested in the municipality.	Yes	No: no.
Yes; no isolation hospital; individual isolation.	No	Yes	No.
Yes, when necessary: we have no isolation hospital.	Yes; with good results.	Yes	Yes; inspection is made of public schools, but no certificate of vaccination required from new school children.
No isolation hospital; I think the doctors do their duty as far as possible in that respect.	Don't know	No	No.
No contagious diseases; no hospital.	I can't say	No	No; no.
Yes; no hospital; houses placarded and general precautions taken.	No; so far as known to the board.	Yes	No; no.
Yes; no hospital			
Yes; any contagious cases are removed to the Kingston Hospital or Hotel Dieu.		Yes	
Yes; no hospital; patients isolated in their own dwellings; rooms well ventilated; houses placarded and disinfected.	No	Not under personal supervision, only under instructions from Board.	Yes; no.
Yes; simple quarantine, placarding, isolation and subsequent cleaning and disinfecting.	Yes; very favourable in all cases.	Yes	No; no

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year. Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Garafraxa	No	Wells, from 12 to 100 feet.	No	None.
Grattan	No	Wells, about 12 feet	No; no	One; not licensed, but kept in fair sanitary condition; no systematic inspection.
Grey	No	Wells, about 16 feet	No	One; yes, licensed; the offal is buried; no inspection.
Gwillimbury, West	No	Wells, from 30 to 50 feet.	No; none that I am aware of.	None.
Gower, South	No	School water procured from neighboring farms.	No; don't know; no.	No.
Grantham	No	Wells	No; no	Six; not licensed; offal fed to hogs; no inspection of carcasses by any officer of the board.
Glamorgan	No	Wells		Eight
Garden Island		River St. Lawrence		None; meat supplied.
Garafraxa, W.	Yes	Wells; 20 feet	No dairies in township.	One not licensed; offal is burned; systematic inspection is carried out by sanitary inspector.
Gosfield, North.	No	Wells; 7 to 10 feet on gravel ridge, 50 to 100 feet in other parts of township.	No; have no information of a case of tuberculosis or test being made.	5; not licensed; don't know how offal is disposed of; no inspection.
Galway and Cavendish.				

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made? How is the cost calculated.	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers?	State No. and kinds of noxious trades. (See sec 63 Public Health Act.) How licensed and regulated.	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case and results of same.
No	No	None	None.
No	No	None	None.
No	No	None	No.
No	No	Not any	No.
No	No	No	No.
Generally removed by owners.	No	None	No.
No	No	None	No.
Yes: each householder removes all garbage and night soil at his own expense.	No	None	No.
Yes	No	None	No.
No; each householder supposed to attend to the matter on his own premises.	No	None, except the business at the above mentioned slaughter houses.	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Gwillimbury, E.	No M.H.O.; A. J. Hughes, Sec.	Inspection made yearly and oftener in the village, and always upon complaint.	Scarlatina, 12 cases; typhoid, 4 cases; tuberculosis. 2 cases, 1 death.
Griffith and Matawachan.	John Holly, Sec	When complaint of nuisance is made.	None .....
Gloucester	R. A. Kennedy, M.D	General inspection early in May by inspectors, principally among villages, examining slaughter houses, piggeries, etc., in accordance with Public Health Act.	Diphtheria, 7 cases, 2 deaths ....
Guelph	John Clark, M.D.; John McCorkindale, Sec.	Sanitary inspection is made at intervals and complaints regarding nuisances promptly attended to.	None .....
Greenock	Dr. Morrison, J. W. McNabb, Sec.	Yes; inspection made at regular intervals.	2 typhoid, no deaths; 1 consumption.
Gainsboro	Dr. Colver, S. Kennedy, Sec.	Yes; action on complaint.	3 scarlatina, no deaths; 4 diphtheria, 1 death; 1 typhoid.
Grimsby, S.....	N. P. Henning, M.D.; Ed. Irvine.	Yes; action taken when complaint is made.	Scarlatina, 2 cases, 2 deaths; typhoid, 1 case.
Jocelyn	No M. H. O.; J. G. Reesor, Sec.	No	None .....
Joly	No M. H. O.; T. Winters, Sec.	Only as required....	None .....
Keewatin Tp...	Dr. Aylesworth.....	Yearly, and when complaint is made to Board.	23 scarlatina, 3 deaths .....
Kinloss	J. S. Tennant, M. D.; Peter Reid, Sec.	Only when complaint is made.	2 consumption, 2 deaths ... .
Kaladar	No M. H. O.; Moses Lessard, Sec.	Action taken only when complaint is made to the Board.	5 diphtheria ....

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists?	Is Diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board.	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Yes; no hospital, but in all cases houses are quarantined.	Board has no definite information.	Yes	No
No hospital; no contagious diseases	No	No	No
No hospital but patients are removed to Ottawa Hospital where desirable; anti-toxine is used.	No		About 30
Yes; and cases are reported to school teachers and no one from infected houses can attend until a certificate is given by attending physician; no hospital.	Yes; good results have been reported.	Yes	No inspection by the Board but at times by the inspector; Yes, teachers must see that all pupils have been vaccinated.
Yes; isolation systematically carried out by placarding and separating patients.	Not in common use; no cases.	Yes	Yes
No	No	No	No; no
Isolated in room at home	No cases this year; used when necessary.	No	No; no
	No	No	No
No hospital	No cases	No cases	No; no
No		Yes	No
Isolation strictly enforced	No cases	Yes	No
Yes	Do not know	Yes	No; no

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcases by any officer of the Board?
Gwillimbury, E.	Forms are supplied to M. D's.	Wells; 20 to 40 feet	No; have no knowledge of any cases in the township.	8; permission is given upon being kept in proper condition.
Griffith and Matawachan.	No	Springs and wells	No; no; no.....	There are none .....
Gloucester.....	....	Wells; every kind of soil.	....	.. ..
Guelph	No medical men in township.	Well water; average 35 feet.	Yes; by city inspector.	5; no license, but are kept fairly clean; offal fed to hogs; no.
Greenock	Yes, all forms are supplied.	Wells; 16 to 20 feet	No; don't know....	9; 8 licensed; offal boiled and fed to hogs, some buried.
Gainsboro	No; no	....	No; no	2 not licensed .....
Grimsby, S.....	Yes.....	Wells	No; no	None.....
Jocelyn	.....	Wells	No	None.....
Joly	No	No well on grounds, water on neat farm.	No; no	None. ... .
Keewatin Tp...	No	Lake of the Woods	No	1; not licensed .....
Kinloss	No	From springs and wells; 15 to 50 ft.	When necessary	No.....
Kaladar	No	Springs	No	1; no; no.....

TOWNSHIP.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made? How is cost calculated?	Is there a public sewerage system? If so, what proportion of houses th whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
.....	....	....	
No	No	None	None.
Not inspected by local Board, but all cattle are tested with tuberculine and very few cases found.	None licensed	.....	None licensed.
Removed on to the farm and plowed in with other manure.	None in township	None	None.
No	No	No	No.
No	No	None	None.
....	No	None	No.
No	No	None	No.
No	....	None	No.
Garbage and night soil removed once a year at $4 per load.	No	None	None.
None	None	None	None.
....	....	.....	No; no.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board?	Contagious diseases.
King	T. J. Norman, M. D.; C. Patterson, Sec.	Action taken only when complaint is made.	No cases
Kennebec	J. R. Helm, M. D.; A. Osborne, Sec.	Yearly, and on complaint..	Two typhoid, 1 death
Kincardine	T. Bradley, M.D.; R. B. Campbell, Sec.	Action taken when complaint is made.	Three typhoid, 1 death; 3 consumption, 3 deaths.
Kingston	No M. H. O.; J. Simpson, Sec.	Only when complaint is made.	One consumption, 1 death
Kitley	M. L. Dixon, M.D.; J. M. Edgar.	Only on complaint	
Luther, West	W. H. Philp, M.D.; W. Duncan, Sec.	Only when complaint is made.	Scarlatina 2, no deaths
Limerick	Dr. Kelly, J.W. Ham, Sec.	No	Diphtheria, 2 deaths
Laxton, Digby and Longford.	Dr. Blanchard, W. Maxwell, Sec.	When complaint is made..	Typhoid fever, 1 death
Front of Leeds and Lansdowne	Wm. Meikle, M.D.; J. D. W. Darling, Sec.	Only when complaint is made.	Ten consumption
Lavant	Dr. Kilborn, J. M. Browning, Sec.	No; no	None
Lanark	No M. H. O.; A. Rankin, Sec.	No; no; yes	One family scarlatina, no deaths; 3 families diphtheria, 1 death; consumption, 6 deaths.
Luther, East	Dr Hopkins, J. D. Watson, Sec.	Yes; repeated	None
Logan	A. D. Smith, M.D; F. Jacob, Sec.	Action taken only when complaint is made.	Six typhoid, 1 death; 2 consumption, 2 deaths.
Lobo	P. S. Graham, M.D.; E. R. Barclay, Sec.	Action taken only when complaint is made.	Two scarlatina, no deaths; 1 diphtheria, no deaths; 1 typhoid, no deaths; 1 consumption, no deaths.
Hagerman	C. O'Gorman, M. D.; Frank McFie, Sec.	Annual inspection in May.	None

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
House placarded	None	Yes	No; no
Yes, when necessary		No	No
Houses are placarded	Cannot say	Yes	No
None	No cases		No; no
Isolated: no hospital	Don't know	No	No; no
			No
Yes; no isolation hospital		Yes	No
No	Yes	No	No; no
No hospital			No; no
No	No	Yes	No
Yes; no hospital	No	Yes	No; no
No; no hospital			No; no
Yes; no hospital	No	No	No
Houses placarded if any epidemic; no isolated hospital.	No, but M. H. O. would use it if provided with it.	Instructions are given by the M. H. O.	Yes; there has been no general vaccination; if points were supplied M. H. O. would vaccinate in this and surrounding townships

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year. Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughterhouses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
King	No	Wells; 15 to 50 ft	No dairy inspector	Ten; not licensed
Kennebec	No	Springs and wells; 10 to 20 ft.	No	None
Kincardine	No	Wells; about 20 ft	No; no	Two; not licensed
Kingston	No	Wells; 12 to 50 ft	No; no	No inspection
Kitley				
Luther West	No	Mostly wells; depth not known.	No; no	None
Limerick	No	No	No	None
Laxton, Digby and Longford.	Yes	Wells; from 25 ft.	No	None
Front of Leeds and Lansdowne	No	Wells; 12 ft	No; yes; no	No
Lavant	No	Spring water	No; no cases	None
Lanark	Supplied by former M. H. O.	Springs and wells; average 15 ft.	No	None
Luther, East	No	On school ground; 200 ft. deep.	No; no; no	Two; fed to hogs; no.
Logan	None	Wells; 15 to 70 ft	No; no	None
Lobo	Yes	Wells; 10 to 55 ft	No; no	One; no; no
Hagerman	If authorized by Prov. Board of Health.	Lakes and wells; wells average 12 feet.	No	None; farmers kill on on their own premises.

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made How is cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	None	None.
	No	None	No.
No	No	No	No.
A nuisance where City of Kingston deposits its garbage.		No	None.
Not required	No	None	3 school houses reported in unsanitary condition; evil remedied by M.H.O.
No	No		No.
Cannot say	None	None	No.
No	No	None	1 complaint; cause removed
No removal by board	No	None	No.
No	No	None	No.
No	No	None	No.
No	No	None	No.
No	No		No.
Yes, in the village; not much attended to in the township generally.	None whatever	None.	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Hillier	J. B. Ruttan, M.D.; for eastern div. of township; J. S. Thornton, M.D.; for western div. of township; Stephen Nease, Sec.	No: no; yes	Two of consumption .....
Howland	No M. H. O.; Andrew Russell, Sec.	Only when complaints are made to board.	One supposed case of typhoid....
Houghton	J. M Tweedale, M.D.; John Boyle, Sec.	No; no.....	About 25 cases diphtheria, and 6 deaths resulting.
Hamilton	No M. H. O.; J. D. Stewart, Sec.	No general inspection this year; only when complaints are made to officer.	Four diphtheria, no deaths; 4 consumption, 4 deaths.
Hullett.	Thos. Agnew, M.D.; James Campbell, Sec.	Yes, when complaint is made.	None..... ....
Howe Island....	Dr. Ryan, Michael Melville, Sec.	.....	Diphtheria, 1 death.....
Hibbert.... ...	No M. H. O.; T. Carroll, Sec.	.....	One case scarlatina reported; no deaths.
Hilton	J. H. King, M. D.; W. E. Whybourn.	Action only taken when complaint is made.	None..... .....
Hawkesbury, East.	No M. H. O.; Paul Labrosse, Sec.	Action only when complaint made.	Two scarlatina, no deaths; 4 diphtheria, 2 deaths; 2 typhoid, no deaths; 11 consumption, 8 deaths.
Hinchinbrook...	Lockhart, M.D.; Jas. Hamilton, Sec.	No; only when complaint is made.	None.....
Harvey	C. E. Bonnell, M.D.; J. S. Cairnduff, Sec.	....	Scarlatina very prevalent in summer; no deaths.
Horton...	Dr. Marn, Geo. Eady, jun., Sec.	No.....	One consumption, 1 death .....

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? state methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
None; no.	Yes	Yes, by M. H. O.	No; no
None required this year	No cases	No cases	Not this year
Yes; houses are quarantined when it is thought necessary.	Some physicians use it and some do not; it is generally successful.	No	No.
No isolation hospital; when necessary houses are placarded and disinfectants used.	Don't know what is used.	Yes, in every case	No.
None	No, not any.		Board of trustees notified of condition yearly.
	Used by physician	Yes	No.
No cases; no	Yes	Yes	Yes
No action taken; no contagious diseases.	No	Yes	No.
Yes; houses placarded	No	No; M.Ds. prescribe what is required.	No: no.
Yes; when they occur	No cases	Yes	No.
Yes; houses placarded; no isolation hospital.	No	Yes	Yes
Yes	Yes	Yes	

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Hillier	No	Generally wells; cannot give depth.	No; no	One; no; fed to hogs; no.
Howland	No		No	None
Houghton	No	Wells; from 10 to 30 feet.	No; no	None
Hamilton	No	Wells; 12 to 75 feet	No inspector; no cases reported.	Four; licensed
Hullet	No	Wells; about 25 feet	No	Two; no; no
Howe Island	No	The St. Lawrence River; pure water.	No	None
Hibbert	No	Wells; 25 to 30 feet	No; no	None
Hilton	No	Spring creek	No inspector; no tuberculosis having occurred.	None
Hawkesbury, East	Yes, to M. Ds.	Wells and rivers; wells from 10 to 20 feet,	No; no	Five; not licensed; no.
Hinchinbrook	No	Well and spring; well 6 feet deep.	No; no	None
Harvey	Yes	Mostly wells; 10 to 15 feet deep.	No; no	None
Horton	Yes	Wells	No	Two; kept in good condition

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers?	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case and results of same.
No	No	Manufacture of oil from fish; permit from council.	No.
No	No	None	No.
No	No		No.
No	No	None	No.
No	No	None	No.
No	No	None	No.
Yes	None	None.	None.
No	No	None	None.
No	No	None	None.
No	No	None	No.
Yes, of garbage	No	None	None.
No	No	None	No

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint is made to Board?	Contagious diseases.
Hallam.....	G. F. Jones, M. D. ; C. S. Draper, Sec.	.....	Three typhoid, none ; 1 consumption, none.
Himsworth, South	J. A. Porter, M.D.; A. E. Trussler, Sec.	Yes ; once yearly.	One diphtheria .....
Hawkesbury, West.	D. J. McIntosh, M.D. ; F. W. Thistlethwaite, Sec.	Once a year, and other times when necessary.	Four diphtheria, 1 death ; tuberculosis, 10 deaths.
Humberstone ..	M. J. Haney, M.D.; A. E. Near, Sec.	Inspection only when complaints are made.	Scarlatina, 8, no deaths: diphtheria, 3, 1 death ; consumption, 3, 2 deaths.
Huron	D. A. McCrimmon, M.D., Angus Martyn, Sec.	Yes ; only when complaint is made.	Four diphtheria, 1 death ; 3 typhoid, no deaths ; 3 tuberculosis, 2 deaths.
Hay	B. Campbell, M.D.; Fred. Hess, Sec.	Yes; inspection of school houses yearly.	Seven scarlatina, 1 death ; 2 diphtheria, no deaths ; 35 typhoid, 2 deaths.
Hallowell	Dr. Jory.....	Inspection in May yearly.	Scarlatina, 1 ; diphtheria, 7 consumption, 2.
Hungerford	Mather, M.D ; T. Graham, Sec.	No.....	None..... ....
Harwich	S. G. Story, M D.; W. R Fellows, Sec.	No.....	Typhoid, 4, deaths, 1 ; consumption, 11, deaths, 11.
Howick	A. M. Spence, M. D. ; Lizzie Walker, Sec.	Yes; when complaint is made.	None..... ....
Howard	D. Marr, M.D. ; Geo. Mcdonald.	Action taken on complaint, but use all precautions.	Diphtheria, a few cases, 1 death ; tuberculosis, 1 case, 1 death.
Huntley...	G. H. Groves, M.D. ; John Argue.	.....	Diphtheria, 5 cases, no deaths ; a few mild cases of scarlatina.

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board.	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
When necessary; no hospital	No	When necessary	No; no
Yes	No	Yes	No
Yes; no hospital	Yes; results satisfactory	Yes	No
Yes; no hospital	No		No
Yes; by isolation and disinfectants.	No	Yes	No
Yes; no hospital	No	Yes	Yes; no
Yes, house placarded	Yes; good results	Yes	No; no
No	No	No	No; no
Yes	Yes; satisfactory	Yes	No; no
Yes	No	Yes	No; no
Yes	Yes	Yes	No no
Yes	Yes	Yes	No; no

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Hallam	Yes	Wells; 15 to 20 feet deep.	No	One; no; no
Himsworth, South	No	Wells; 8 to 10 feet	No; no	Two; not licensed
Hawkesbury, West	Yes	Wells; 15 to 20 feet	No	One; not licensed
Humberstone	No	Wells; 10 to 30 feet	No; no	Four
Huron	Yes	Wells; average 30 feet	No no	Two; not licensed
Hay	No	Wells		
Hallowell	No	Wells; 20 feet	No; no	Four; not licensed; no
Hungerford	No	Wells; 15 feet	No: no	One
Harwich	No	Wells, 10 feet; artesian wells, 150 feet.	No	Four; no
Howick	No	Springs	No: no	Two; no; fed to hogs
Howard	M. H. O. only		No; no	Two
Huntley				

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers?	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
Yes	No	None	No.
No	No	None	No.
No	No	None	None.
No	No	None	None.
No; in village of Ripley night-soil is removed at cost of party concerned.	Yes, in village of Ripley; about one half.	None	No.
No	No	Three cheese factories, one tannery.	None.
No	No	None	No.
No	No	None	None.
By householder	No	None	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
London	D. G. McNeill, M. D.; James Grant, Sec.	Only when complaint is made.	Twenty scarlatina; 9 diphtheria, 3 deaths; 8 typhoid; 3 consumption, 3 deaths.
Longueuil	No M. H. O.; Max Pilon, Sec.	No; no; no complaint....	Two consumption, 2 deaths.....
Lac Seul	T. Hanson, M.D.; Thos. H. Pritchard, Sec.	No	Ten tuberculosis, 4 deaths .....
Mara	Wm. Gilpin, M.D.; W. R. McPhee.	Action taken when complaint is made; inspection is made in spring.	Diphtheria, 1 case; tuberculosis, 4 cases, 3 deaths.
Maryborough...	J. J. Cassidy, M.D.; E. Dynes, Sec.	No; no; only when complaint is made.	Ten diphtheria, 2 deaths; 5 typhoid; 3 consumption, 3 deaths.
Marysburg, N ..	J. W. Wright., M.D.; Levi Williams, Sec.	Action taken when complaint is made to board.	One consumption; 1 death.....
Marysburg, S ..	H. Bredin, M.D.; W. B. Head, Sec.	Inspection by M.H.O.....	None .....
Medora and Wood	No M. H. O.; H. C. Guy, Sec.	General inspection in spring; repeated when complaint is made.	None .....
Monaghan, N ..	N. I. Greer, M.D.; G. W. Bennett, Sec.	Yes; action taken on complaint.	One diphtheria .....
Monaghan, S...	W. Montgomery, M.D.; Alfred Maycock, Sec.	No; action taken when complaint is made to board.	Seven diphtheria, 2 deaths; 1 consumption, 1 death.
Minden	Dr. Curry, S. F. Stinson, Sec.	Yes; yes	Eleven diphtheria, no deaths....

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is Diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
No; only by placarding the house and removing patients to the hospital; no isolation hospital.	No	No	No
No			No
No		No	No
Yes	Yes; physicians consider it very helpful.	No	No; no
Yes; patients isolated; disinfected by usual methods.	Yes; good results in all cases not too far advanced.	Yes	No; no
None to isolate	Not required	Not required	No
			No; no
Yes; no hospital	No	Yes	Yes; no
Yes; houses placarded; patient removed to Nicholl's hospital.	Don't know	No	No; no
House placarded; no isolation hospital.	Our M. H. O. uses it with good results; every case a success when used early in case.	Yes	No; no
Yes; isolated; no hospital	Yes; decidedly favourable.	Yes by M. H. O	Yes; by vaccination; no

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year. Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the board.
London	No	Wells and springs; wells 10 to 50 ft.	No; no	Thirty; yes; fed to hogs; no.
Longueuil	No		No	Two; no
Lac Seul	No	From lake	No	None
Mara	No	Wells, from 12 to 75 ft.	No; no	Three; no; buried; no.
Maryborough	No	Wells, about 17 ft.	No; none reported.	No; no; no
Marysburg, N.	No	Wells, 12 to 15 ft	No; no	None
Marysburg, S.	No	Wells, 16 to 20 ft	No; no	None
Medora and Wood	No	Lakes and wells	No; no	One; no license
Monaghan, N.	No	Wells	No; none	Five; yes; boiled; no.
Monaghan, S.	No	Wells, 25 to 35 ft	No; no	None
Minden	No	Springs	No; no	None; kept perfectly clean.

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made. How is the cost calculated?	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, results of same.
No	No	One bone boiling establishment, licensed.	No.
None	None	None	No.
Yes, every spring and garbage burnt.	No	None	No.
No	No	None	No.
Yes	No	None	No.
Only by individual residents.	No	None	No
No	No	Three butchers not licensed.	No.
No; some earth closets; contents buried.	No	None	No
No	No	None	Yes; party established a nuisance; was tried and convicted; fined $50; fine remitted by guaranteeing to abate the nuisance.
No	No	None	None.
Village small; people look after this carefully.	No	None	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Mersea	C. Chamberlain, M. D.; Alfred Hairsine, Sec.	When complaint is made..	One diphtheria, 1 death; 6 typhoid, 2 deaths; 3 consumption, 3 deaths.
Murray	P. J. Clune, M.D.; T. R. Jarratt, Sec.	Only when complaint is made.	Six scarlatina, 1 death .....
Medonte	J. A. Harvie, M.D., and A. W. Heaslip, M.D.; T. D. Robinson, Sec.	Only when complaint is made to board.	Three diphtheria, 1 death .....
Mulmer	R. L. Island, M.D.; M. Laiking, Sec.	On complaint to board	Twenty-one diphtheria, 2 deaths; 3 consumption, 3 deaths.
Metcalf	A. Nixon, M. D.; John Hutton, Sec.	Yes; at intervals.....	Six diphtheria..... .....
Mornington	Dr. Johnston, J. Watson, Sec.	Yes; as required	One scarlatina, 1 death.....
Matilda	J. Harkness, M.D.; J. D. Dixon, Sec.	Action taken only on complaint.	Four typhoid .....
Maidstone.....	R. F. Rorke, M.D.; M. McHugh, Sec.	Action only on complaint being made.	A number of diphtheria, three deaths.
Middleton	J. W. Renwick, M.D., J. Burnett, Sec.	When complaints is made to board.	Three scarlatina, no deaths, 1 diphtheria, no death.
Malden	T. J. Park, M.D., Jas. Honer, Sec.	Action taken only when complaint is made.	One case typhoid, no death .....
Muskoka	Dr. McCarnell, R. E. Suttaby, Sec.	No	One typhoid, 1 death.....

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is Diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year.
Yes; isolated; no isolation hospital.	None used	Under instructions of M. H. O.	Not regularly; no.....
Only the usual precautions taken.	No cases this year	No	No ....
No isolation hospital; houses placarded.	.....	No; not always	No .....
Isolation	Cannot say	No	No .....
....	.....	....	Yes; no .....
Yes; no isolation hospital...	Have had no occasion to use it.	Yes	Yes; no ....
No	....	No	No ....
Houses placarded	Don't know	Don't know	No; no ....
Isolated by confining all inmates of house to the premises.	.....	When necessary	No ....
Yes; no hospital houses placarded.	I understand it is	Yes.....	No ....
Houses are placarded	Not very much used; very unsatisfactory.	Yes.....	No .....

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells, state usual depth of water bearing stratum.	Is there any systematic inspection of dairy cows made during the year. Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Mersea	Yes	Wells, 12 to 20 ft, and artesian wells.	No; no	One; not licensed; no.
Murray	Yes		No; no	Three; yes; buried; no.
Medonte	Yes	Running streams and wells, about 40 ft.	No; no	Seven; not licensed offal discharged into running streams.
Mulmer	Yes	Wells, 20 to 50 ft	No; no	One
Metcalf	No	Wells, about 30 ft	No	None
Mornington	By board of health officers.	Wells, average 30 ft	No; no	Two; no; by burning no.
Matilda	No	Wells; 12 to 50 ft	No; no; no	One
Maidstone	No	Wells; 10 to 50 ft., and lake.	No; no	Four
Middleton	No	Spring creeks and wells; 10 to 50 ft.	No	Two; 1 licensed, the other closed.
Madden	Yes	From wells; 100 ft. deep.	No; no	One; not licensed; fed to hogs; no.
Muskoka	No	Wells and creeks	No inspection made.	Two; not licensed

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made. How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated.	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	None	None.
No	No	None	No.
No	No	None	No.
No	No	None	No.
No	No	None	No.
No	No	None	No.
			No.
No	No	None	No.
No	No	No	None.
			None.
No	No	None	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Mountain	G. Steacy, M.D.; H. Martin, Sec.	Action taken when complaints is made.	One consumption, 1 death . ....
Matchedash	E. W. Kitchen, Sec.....	Action taken when complaint is made to board.	None .....
Moulton	Dr. Hopkins, H. Logan, Sec.	No; only when complaint is made.	Seven diphtheria, 1 death; 3 consumption, 3 deaths
Mattawan	No M. H. O.; Edward Jones, Sec.	No	None .....
Mayo	No M. H. O.; R. Ramsbottom, Sec.	No; no	None .....
Machar	No M. H O.; R. Cole, Sec.	No; except when complaints is made.	One typhoid; 1 consumption, 1 death.
Monck	Dr. Bridgeland, W. H. Spencer, Sec.	Action taken when complaint is made.	None .....
Mariposa	None; J. B. Weldon, Sec.	Yes; once a year or when complaint is made.	Fourteen diphtheria, no deaths..
Malahide	Dr. McLay, J. Haggan, Sec.	Only when complaint is made to board.	Three or 4 scarlatina, no deaths; 3 or 4 diphtheria, no deaths; 5 typhoid.
Melancthon	G. Clingan, M.D.; James Brown, Sec.	Action taken only when complaint is made.	Five diphtheria, no deaths; 5 5 consumption, 5 deaths.
Minto.....	W. A. Harvey, M.D.; W. D. McLellan, Sec.	Action only when complaint is made.	Two scarlatina, no deaths; 4 typhoid, no deaths.

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results in treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an official of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
No; none	No	No	No; no
No; no hospital	None required	None	No; no
Isolated; no hospital	Yes; good; all recover if used in time.	Don't know	No; no
No	No	No	No; no
			No
Isolation as much as possible; no hospital.		Yes	No; no
Isolation when necessary		Yes	No; no
Yes; by placing in isolated rooms; no hospital.	Yes, results good	Trained nurses mostly employed who look after disinfection.	Yes; no
Yes; no hospital	No; used by some; no reports.	Yes	Yes; yes
Yes	No	Not fully carried out	Generally
No hospital	No; so far as known	No	No; no

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughterhouses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcases by any officer of the Board?
Mountain	No	Wells; 10 to 30 ft	No; some cases of tuberculosis; don't know what test used.	One; not licensed; no inspection.
Matchedash		Wells mostly; 12 to 14 ft.	No; no	None
Moulton	No	Wells; 10 to 20 ft	No; no; no	Two; not licensed; cooked and fed to hogs; no.
Mattawan	No	Rivers and wells; 25 ft.	No; no	None
Mayo	No	Springs, running streams and wells; 3 to 46 ft.	No	None
Machar	Yes	Rivers and wells; 12 to to 18 ft.	No	One
Monck	No	Wells; 8 to 12 ft	No; no	Two; not licensed
Mariposa	Yes	Mostly wells; about 20 ft.	No; not to my knowledge.	Two; not licensed
Malahide	Yes	Wells	Think so; don't know.	Eleven; yes; buried with lime; yes.
Melancthon	Yes	Wells; about 30 ft	No	Three
Minto	No	Wells; 15 to 25 ft	No; no	Four; yes; no

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to who o is connected with public sewer.	State No. and kinds of noxious trades. (See sec. 53 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	None	None.
All carted on the farm lands.	No	No	None.
No	No	None	No
No	No	None	None.
.....	No	None	No.
No	No	None	None.
Everyone removes their own garbage.	None	No	None.
Cleaned once a year	No	None	No.
Yes; by the farmers.....	No	None	No.
.....	.....	.....	None.
No	No	None	None

TOWNSHIPS—*Continued*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it reported at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Madoc	W. A. Dafoe, M.D.; J. R. Kitcheson, Sec.	Only when complaint is made.	Two scarlatina, no hs .... .
McLean and Ridout	No M.H.O.; W. H. Brown, Sec.	Every spring and when complaint is made.	One typhoid, no deaths .....
McMurrich.....	H. L. Barber, M.D.; T. Upton, Sec.	Generally in May, yearly, and when complaint is made.	No cases .....
McKellar	No M. H. O.; G. B. Lee, Sec.	Only on complaint.....	None .....
McKillop	No M. H. O.; J. C. Morrison, Sec.	School premises inspeeted annually by Board.	None .....
McNabb	S. W. Ward, M.D.; J. D. McNab, Scc.	Yes; yes	Twenty-five scarlatina, 2 deaths; 3 diphtheria; 5 typhoid; consumption, 3 deaths.
McDougall	T. S. Walton, M.D.; D. McFarlane, Sec.	Action taken only on complaint.	None .....
McKim	R. B. Struthers, M. D.; T. Stoddart, Sec.	Only occasionally or when complaint is made.	Five diphtheria, no deaths; 2 typhoid; 1 consumption, 1 death.
Manvers	W. W. Nasmyth, M. D.; Alfred Ryley.	No	No contagious diseases.....
Macaulay	S. Budgland, M.D.....	Only on complaint.....	No contagious diseases.....
March	G. H. Groves, M.D	General inspection.....	A large number of cases of scarlatina.

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? (Give results in treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Isolation when necessary	No cases	When thought necessary.	No .....
Yes.....	No experience	Yes	Yes.....
Houses isolated when required; also placarded; no hospital.	Yes; results good	Under direction of M. H. O.	No; no ....
....	.....	.....	No .....
No; no hospital.....	Don't know	Yes; if necessary	No .....
Yes; no hospital	Am not aware of any ...	Yes	No; no; no.....
....	.....	.....	No .....
Isolation when necessary....	Where used has been a decided success.	Carried out by M. H. O.	No .....
Yes; houses placarded.....	No	Under supervision of M. H. O.	No; no .....
....	.....	Yes.....	No .....
.....	.....	By M.H.O	.....

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughter-houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcases by an officer of the Boards?
Madoc	Yes	Wells; 10 to 30 ft	No	Two; don't know
McLean and Ridout	Yes	Wells; about 20 ft	No; no	One; by boiling and burying.
MuMurrich	No	Wells; 16 ft	None yet	None
McKellar				
McKillop	Yes; to teachers.	Wells; about 20 ft	No	One; not licensed
McNabb	No	Springs and wells; 10 to 15 ft.	No	Two; no; buried and burned and fed to pigs.
McDougall				
McKim	No; yes	Wells	No; no	Two; not licensed
Manvers	No	Wells	No; no	Two slaughter houses; no license.
Macaulay	No	Wells	No	
March				

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	None	No.
Yes	No	None	None.
None	No	None	No.
None	No	None	None.
No; earth closets cleaned every spring.	No	No	None.
No	No	None	No.
No	No	None	No.
No			No.

TOWNSHIPS —*Continued.*

Name of Municipality.	Name of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board?	Contagious diseases.
Nottawasaga ...	Dr. McAllister, Sec	Action taken only when complaint is made.	3 scarlatina, no deaths; 4 typhoid, 1 death; 5 consumption, 5 deaths.
Nissouri, East..	R. E. Fowle, M. D.; W. E. Andison, Sec.	No; no; ye	Typhoid pneumonia, 1 death; 4 tuberculosis, 4 deaths.
Nichol.....	Dr. Paget, J. R. Wissler, Clerk.	Yes; no; only when complaint is made.	1 typhoid, no death ....
Norwich	A. J. Colver, M.D.; E. McFarlane, Sec.	No	2 diphtheria, 2 deaths: 2 consumption, 2 deaths.
Niagara	R. J. Trimble, M. D.; C. Fisher, Sec.	Action taken only when complaint is made.	2 consumption, 2 deaths.....
Nipissing.	No M. H. O.; W. Maltby, Sec.	General inspection once each year.	None ....
Nissouri, West .	J. W. Ford, M.D.. W. Lee, Sec.	Yes; 3 or 4 times during summer.	None ....
Nepean	J. M. Shillington, M. D.; G. O. Richardson, M.D.; F. W. Harmar, Sec.	Only on complaint.....	Scarlatina, 15 cases: diphtheria, 24 cases, 3 deaths.
Nightingale, etc.	——Robertson, M.D.; J. A. Devaney, Sec.	Yes; repeated at intervals.	Scarlatina, 6 cases; tuberculosis, 1 case.
Oakley	No M. H. O.; Arthur Caske, Sec.	Action taken only on complaint.	Diphtheria, 1 family. 1 death....
Oakland.	Thomas H. Mott, M.D.; Henry Key, Sec.	....	Tuberculosis, 1 case; 1 death....

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
No isolation hospital; isolation systematically carried out; whole family confined to house 30 days.	Not in general use	Yes	No
Not well carried out; each physician decides what means to adopt.	No	No	No; no
Yes; placarded; no; no	No	Yes	No, no
No	No	No	No
No; no hospital	No	No	No
		Yes	No
No	Cannot say		No; no
Yes; as far as possible; no hospital.	By some physicians	No	No; no
As far as possible; patient isolated in room.	No; no case this year	Yes	No
Sanitary inspector looks after the case.	Don't know	Yes	No
No isolation of contagious diseases.		Under the supervision of M. H. O.	No

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Nottawasaga ..	No	Generally from wells; average 30 feet.	No	Two; not licensed .....
Nissouri East...	Yes; to physicians.	Wells, 10 to 200 ft	No; not reported...	Two; no; no.....
Nichol.	Yes.....	Wells, about 16 ft	No; no; yes; the tubercular test has been used in several cases.	Two.....
Norwich	No	Wells, about 24 ft.....	No; none reported..	Two; not licensed .....
Niagara.....	No	Wells, 20 to 65 ft., and cisterns.	No; none reported..	One; not licensed.. ...
Nipissing.....	No	Wells, 12 to 15 ft	No	None .....
Nissouri, West .	Yes....	Wells, 20 to 30 ft	No; no	Three; licensed; boiled and fed to hogs; yes.
Nepean	No	Wells	No; a few cases have occurred.	Seven; yes.....
Nightingale, etc.	No	Wells	No	Nearest one is 3 miles away.
Oakley.....	No	Wells	No; no	None .....
Oakland.	No.....	Wells	No.....	Three slaughterhouses no.

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. See sec. 63 Public Health Act. How licensed and regulated.	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	None	No.
No	No	One tannery	No.
Yes; once each year	No	None	No.
No	No	None	No.
No	No	None	No.
Yes	No	None	No.
No	No	None	No.
	No	None	Two prosecutions, one for depositing city night soil in the township, fined $20 and costs; one for slaughtering animals without a license, fined $25 and costs.
Yes; by residents	No		No.
No	No	None	No.
No		None	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Oliver	T. S. Smellie, M.D.; Allan Shank, Sec.	No inspection	Diphtheria, 1 case
Olden	A. E. Fouboy, M.D.; M. W. Price, Sec.		No contagious diseases
Onedia	W. E. Omstead, M.D., John Senn, Sec.	Action taken when complaint is made.	Four cases of diphtheria, 1 death; 1 case of typhoid.
Ops	Thos W. Poole, M.D.; W. F. O'Boyle, Sec.	General inspection	Diphtheria, 6 cases, 1 death; typhoid, 1 case.
Oro	W. H. Clutton, M.D.; H. J. Tudhope, Sec.	Only on complaint	Diphtheria, 2 cases, 1 death; scarlatina, 2 cases; tuberculosis, 2 cases, 2 deaths.
Osprey	John Scott, M.D.; Thomas Scott, Sec.	Action taken only on complaint.	Diphtheria, 26 cases, 2 deaths
Oso	H. N. Coulter, M.D	Only on complaint	Diphtheria, 2 cases, 1 death
Orillia	G. H. Corbett, M.D.; A. Fowlie, Sec.		Diphtheria, 1 case
Oxford, East	James McLurg, M. D.; John Peers, Sec.	Yes.	Diphtheria, 1 case
Oxford, West	—— Beasley, M.D.; W. G. Francis, Sec.	General inspection once a year.	Scarlatina, 1 case; typhoid, 2 cases; tuberculosis, 1 death.
Oxford	John A. Jones, M. D; Wm. Lindsay, Sec.	Action taken only on complaint.	Tuberculosis, 1 case, 1 death

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Yes		Yes.	
			No; no
Yes; no hospital		Yes.	An annual inspection
No hospital		Yes.	
No hospital		No	No; no
Yes.	Yes; physicians report good results.	Yes; under M. H. O	No
Yes.	Used by M.H.O	In some cases	No; no
Yes.	Cannot say	No	No
Yes; houses are placarded; no hospital.	Not general	No	Yes; yearly; no.
		Yes.	Yes; no
Isolation at home	Yes; very satisfactory	Yes.	No; no

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are form for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year. Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughterhouses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcases by any officer of the Board?
Oliver	No	..	No	None
Olden	No	Wells and springs	No	One slaughterhouse buried.
Oneida	Not to teachers.	....	No dairy in township.	None
Ops	Yes.	Wells; from twelve to sixty feet.	One animal slaughtered for tuberculosis.	Five slaughterhouses; licensed.
Oro	No	Wells and springs	No; no test used	Two slaughterhouses; no; fed to hogs; no.
Osprey	No	Generally from wells; 30 to 50 feet.	No	Three slaughterhouses; no license.
Oso	No	Springs and wells	No	No slaughterhouses
Orillia	Yes.	Wells; average depth 15 feet.	No	Two slaughterhouses; no license.
Oxford, East	No.	Wells; depth 25 to 30 ft.	No	Two slaughterhouses; no license.
Oxford, West	.....	Wells and springs; 20 to 120 feet.	No; no	Eight slaughterhouses; generally fed.
Oxford	Yes.	Wells; 18 to 20 feet	No; no	No slaughterhouses

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made. How is the cost calculated?	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
....	None.....	None.....	No.
No.....	None.....	None.....	No.
No.....	Mo.	None.....	No.
No.....	No.....	None.....	No.
No.....	No.....	... .	No.
No.....	No.....	None.	No.
No.....	No.....	None.....	No.
No.....	No.....	None.....	No.
No.....	No.....	None.....	No.
....	.....	.....	No.
No.....	No...	None.....	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Oxford, North ..	J. McWilliam, M.D., Sec.	General inspection twice a year.	....
Osnabruck.....	David Jamieson, M. D.; H. E. Hodgins, Sec.	Only on complaint.....	Scarlatina, 2 cases, 1 death; tuberculosis, 9 cases, 9 deaths.
Otonabee.....	—— Shaw, M.D.; J. M. Drummond, Sec.	Cheese factories inspected and complaints investigated.	Scarlatina, 8 cases: tuberculosis, 6 deaths.
Onondaga	J. Odgen, M. D.; S. J. McKilvey, Sec.	Action taken only on complaint.	Tuberculosis, 1 case..... .....
Peel	James Wallace, M.D.; M. Henderson, Sec.	Only when complaint is made.	Diphtheria, 1 case, 1 death; tuberculosis, 3 cases, 3 deaths.
Pilkington.. ..	——Robertson, M.D.; Geo. Cromar, Sec.	General inspection yearly.	Diptheria, 4 cases; typhoid, 1 case.
Petewawa.....	No M.H.O.; Geo Guestin, Sec.	.....	Diphtheria, 1 case ....
Pelee	No M. H. O.; John McLellan, Sec.	No inspection	No contagious disease .....
Pittsburg	No M.H.O.; W. Murray, Sec.	Only on complaint.....	Tuberculosis, 4 cases .....
Puslinch	No M.H.O.; J. McLean, Sec.	General inspection twice a year.	Diphtheria, 4 cases, 1 death; typhoid, 2 cases; tuberculosis, 1 case.
Plantagenet, N.	V. Gaboury, M. D.; J. Belliuger, Sec.	No inspection	Typhoid, 5 cases; tuberculosis, 3 cases.

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year.
.....	....	.....	Yes. .....
Isolation carried out in all cases except tuberculosis ..	.....	No.....	No ; no .....
Houses placarded	No..... ..	Yes.	No ; no .....
.....	No.....	Yes ; where necessary ..	No. ....
General isolation.....	No	Yes	No ; no .....
No hospital	.....	Yes	Yes ; no .....
No hospital	.....	.....	No ....
....	.....	.....	No ; no .....
No hospita	....	....	No ; no..... ....
No hospita ; isolated at home	No	Under sanitary inspector	Systematic inspectio carried out.
Fairly well : no hospital	Yes	Yes	No ; no ....

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year. Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughterhouses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcases by any officer of the Board?
Oxford, North..	No.....	Wells; about 30 feet....	No; no	Two slaughterhouses; licensed; boiled and fed to hogs; no.
Osnabruck	Yes.	Wells; from 15 to 40 feet.	No; no cases.....	Six slaughterhouses; no license; no inspection.
Otonabee	No.....	Wells	No; no	Three slaughterhouses; offal fed to hogs; no inspection.
Onondaga.....	No.....	Wells; 12 to 25 feet	No.....	One slaughterhouse; no inspection.
Peel	No	Wells	No inspection	None .....
Pilkington	No	Wells, 20 to 25 feet deep.	No; no.....	None .....
Petewawa	No	Good springs and wells .	No	None .....
Pelee	No	Wells and lake	No	None .....
Pittsburg	No	Wells, 15 to 20 feet	No; no	None .....
Puslinch	No	Springs and wells, 10 to 70 feet.	.....	Two slaughterhouses, not licensed.
Plantagenet, N..	No	Wells, 3 to 22 feet	No; no	Five slaughterhouses ..

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made. How is the cost calculated?	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	None	No.
No	No	None	No.
No	No	None	No.
No	No	None	No.
No	No	None	No.
Placed on land	No	None	No.
No	No		No.
	No	None	No.
No	No	None	No.
		None	No.
No	No	None	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Name of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Papineau	No M.H.O.; Edward Jones, Secretary.	On complaint	No contagious diseases .....
Pickering	No M.H.O.; D. R. Beaton Secretary.	Annual inspection.....	Scarlatina, 11 cases; diphtheria, 9 cases, 1 death; typhoid, 6 cases; tuberculosis, 17 deaths.
Perry	H. L. Barber, M.D.; E. B. Clearwater, Secretary.	Annual inspection	Scarlatina, 1 case; diphtheria, 1 case; typhoid, 3 cases; tuberculosis, 1 case, 1 death.
Proton	R. M. Mitchell, M.D.; T. Laughlin, Secretary.	On complaint only.....	Typhoid, 4 cases; tuberculosis, 4 cases, 4 deaths.
Plympton	P. Brown, M.D.; J. K. Cairns, Secretary.	Action on complaint	No contagious diseases.....
Percy	J. M. Cleminson, M.D.; R. P. Hurlbert, Secretary	Annual inspection	Diphtheria, 1 case; typhoid, 1 case.
Pelham	J. C. Crow, Secretary	General inspection.....	Three cases of contagious diseases
Palmerston	J. Elkington, M. D.; J. Allan, Secretary.	Action on complaint.....	No contagious diseases .....
Rochester	R. R. Rorke, M.D.; S. Ducharine, Secretary.	When complaint is made..	Scarlatina, a few cases; diphtheria, 2 cases, 1 death; tuberculosis, a few cases, 1 death.
Rainham.....	John Fry, M.D.; R. A. Havill, Secretary.	Only on complaint.....	Diphtheria, 2 cases. 1 death. ...
Ryerson.....	Dr. Crawford; Edward Geddes, Secretary.	Action on complaint.....	Diphtheria, 4 cases, 4 deaths; typhoid, 1 case, 1 death; tuberculosis, 1 case, 1 death.

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
No		Yes	No; no
Yes	No	Yes	Yes; no
No hospital	Yes; results good	Yes	No; no
Yes			No; no
No hospital			No; no
No hospital	Yes; good results	Yes	No; no
No hospital			No
Placard the houses	Yes; very satisfactory	Yes	No
No		No	No
Yes	Yes		No

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state the usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year. Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of car cases by any officer of the Board?
Papineau	No	Wells	No	Three slaughter houses; fed to hogs.
Pickering		Wells	No; one case discovered; animal destroyed.	13; licensed; offal buried.
Perry	No	Wells, 18 to 25 feet	No; no	One; not licensed
Proton	Yes	Wells	No	None.
Plympton	Forms for M. H. O.	Wells, 20 feet	No; no	One; no license
Percy	Yes	Well	No; tuberculine test has been used	Three; no license
Pelham				
Palmerston	No	Wells, 6 to 30 feet	No	No
Rochester	Yes	Wells	No; no	Two; slaughter houses
Rainham	No	Wells, 15 ft	No	None
Ryerson	No	Wells	No	None

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made. How is the cost calculated?	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in the nature of the case and results of same.
No	No	None	No.
No	No	None	No.
No	No	None	No.
No	No		No.
No	No	None	No.
No	No	None	No.
None	No	None	No.
No			No.
No	No	None	No.
			No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Rayside	No M. H. O.; Z. Regimbal, Secretary.	No inspection	
Raleigh	S. N. Young, M.D.; J. G. Stewart, Secretary.	Action on complaint	Scarlatina, 1 case; diphtheria, 3 cases.
Reach	No M. H. O.; D. M. Spence, Secretary.	Yes; general inspection	Scarlatina, 1 case, 1 death; tuberculosis, 6 cases, 6 deaths.
Romney	Dr. Wright; J. W. Hodgson, Secretary.	Yes	Typhoid, 1 case, 1 death; tuberculosis, 1 case.
Radcliffe and Raglan.	J. E. Miller, Secretary		No contagious diseases
Rolph, Buchanan and Wylie.	W. L. Gray, M.D.; F. McCarthy, Secretary.	No	Diphtheria, 10 cases, 2 deaths
Ryde	S. Bridgland, M.D.; Walter Tingey, Secretary.	No	Diphtheria, 3 cases
Richmond	A. Winters, Secretary	Township is in a fairly healthy condition.	
Scarboro'	O. Sisley, M.D.; Thomas Crawford, Secretary.	General inspection	Scarlatina, 70 cases, 4 deaths; diphtheria, 24 cases, 2 deaths; typhoid, 18 cases, 3 deaths; tuberculosis, 3 cases.
Sarawak	C. M. Lang, M.D.; John Mackenzie, Secretary.	General nspection	No contagious diseases
Sherbrooke	N. Hopkins, M. D.; Reuben Hexemer, Secretary.	No inspection	
Sidney	J. U. Simmons, M.D.; F. B. Prior, Secretary.	Action taken on complaint.	Typhoid, 1 case, 1 death; tuberculosis, 3 cases, 3 deaths.
Sarnia	T. G. Johnson, M.D.; M. Lowrie, Secretary.	Only on complaint	Diphtheria, 2 cases, 1 death; tuberculosis, 1 case, 1 death.
Saugeen	D. Veitch, M.D.; R. Fleming, Secretary.	General inspection	Diphtheria, 1 case, 1 death; tuberculosis, 2 cases, 2 deaths.

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is Diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
... .	....	....	....
Yes	Yes; all cases recovered.	No	No; no .....
No	.....	No	No ....
Yes; placarding, etc.....	Yes; very successful ...	Yes	No .....
... .	Not in use	Yes	.....
Yes; no hospital	Yes, in use	No	No .....
Yes; looked after by sanitary inspector.	No	Yes	No no .....
....	.....	.....	.....
Yes	No	No.....	Annual inspection of schools.
....	No	Yes	Yes .....
None	Yes, with good results ..	Yes	No .....
Yes	.....	Yes	No ....
No hospital	....	No	No . .....
No hospital	....	Yes	No .....

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year. Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Rayside		Wells	No	None
Raleigh	Yes	Wells	No; no	Four
Reach	No	Wells	No	Two; not licensed
Romney	Yes	Wells	No	Two; no; no
Radcliffe and Raglan.			No	None
Rolph, Buchanan and Wylie.	No		No	None
Ryde	No	Wells	No; no	None
Richmond				
Scarboro'	Yes	Wells	No	Ten or twelve
Sarawak	Yes		Yes	One slaughterhouse
Sherbrooke	No	Springs	No	None
Sidney	No			Four slaughterhouses; no inspection.
Sarnia	No	Wells	One inspection made	Six slaughterhouses under inspection.
Saugeen	Forms supplied to M. H. O.	Wells and springs	No inspection	Five slaughterhouses

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made. How is the cost calculated?	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
.....	.....	.....	.....
No	No	None	No
No	No	None	No.
No	No	None	No
.....	.....	.....	No.
No	No	None	No.
No	No	None	No.
.....	.....	.....	
No	No	.....	No.
.....	No	None	No.
No	No	None	No.
Yes	No	None	No.
.....	.....	.....	No.
Yes	No	.....	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Sophiasburg	John Cryan, M.D.; C. H. Wright, Sec.	Only on complaint.....	Tuberculosis, 1 case, 1 death....
Saltfleet.....	B. E. Thompson, M.D.; R. R. Smith, Sec.	Action on complaint.....	diphtheria, 14 cases, 5 deaths; typhoid, 2 cases.
Sandwich East..	D. Bechard, M.D.; M. M. Renaud, Sec.	When complaint is made .	Scarlatina, 2 cases; diphtheria, 1 case; tuberculosis, 2 cases, 2 deaths.
Stamford.....	J. M. Dee, M.D.; F. A. Hutt, Sec.	General inspection.....	Scarlatina, 4 cases; typhoid, 1 case.
Sebastopol	No M. H. O	.....	No contagious diseases.....
Sunnidale	George Hunt, M.D.; Geo. Burrows, Sec.	Only on complaint.....	Diphtheria, 6 cases, 3 deaths ....
Sydenham.....	A. C. Sloane, M.D.; James Cannon, Sec.	Only on complaint.....	Typhoid, 4 cases; tuberculosis, 5 cases, 5 deaths
Seneca	No M. H. O.; A. Williams, Sec.	Yes	No contagious diseases.....
Sandfield	Dr. Barry; Wm. Hare, Sec.	No inspection	No contagious diseases.....
Sheffield	C. W. Clark, M.D.; J. Aylsworth, Sec.	Action on complaint	Tuberculosis, 5 cases, 5 deaths...
Scott	No M.H.O.; Wm. Nelson, Sec.	No inspection	No contagious diseases.....
Sault St. Marie.	Dr. Gibson; W. C. Nixon, Sec.	Action on complaint.....	Tuberculosis, 1 case, 1 death ....
Somerville.....	K. S. Frost, M.D.; S. Suddaby, Sec.	....	Tuberculosis, 1 case, 1 death ....
Stisted	No M.H.O.; T. Lakeman, Sec.	On complaint	None ....
Southwold.....	D. Smith, M.D.; M. Campbell, Sec.	General inspection.....	Diphtheria, 3 cases, 1 death; typhoid, 2 cases; tuberculosis, 4 cases, 4 deaths.
Sullivan.....	R. H. Orton, M.D.; A. Stephen, Sec.	Only on complaint.....	Tuberculosis, 1 case, 1 death ....

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
No; no hospital		No	No; no
Yes	Yes, good results	Under personal supervision of M. H. O	Annual inspection
No hospital	No	Yes	No
No hospital	No	No	Yes
No hospital	No.		
Yes		No	No
Yes	No	Yes.	No; no
No hospital		Yes	No
			No
No		No	No
No		Partially so	No.
No hospital			No.
Yes		Yes	No.
Yes	No.	Yes	No.
By placarding	Yes	Under supervision of M. H. O.	Yes
Yes		Yes	No; no.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water-bearing stratum.	Is there systematic inspection of dairy cows made during the year. Have cases of tuberculosis occurred, and state whether the tuberculine test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Sophiasburg	No forms	Town wells	No; no	Two slaughterhouses not licensed.
Saltfleet		Wells	No; no	Four slaughterhouses; offal fed to hogs.
Sandwich, East.	No forms	Wells, 8 to 20 ft	No	Five slaughterhouses; offal buried.
Stamford		Wells, 30 to 40 ft	Yes.	Three slaughterhouses; offal fed to hogs.
Sebastopol		Wells and springs		
Sunnidale	No	Wells	No	One slaughterhouse
Sydenham	Yes	Wells	No	No slaughterhouses
Seneca	No	Wells and springs, 30 to 60 ft.	No	None in township
Sandfield	No	Springs and wells	No	
Sheffield	No	Wells	No	Two slaughterhouses; no inspection.
Scott	No	Not reported	No	
Sault St. Marie.	No	Springs and wells	No	One slaughterhouse
Somerville			No	
Stisted	No	Wells	No	None
Southwold	No	Wells, about 20 feet	Yes	Eight slaughterhouses; inspection during warm weather.
Sullivan	Yes	Wells, 10 to 20 feet	No	One slaughterhouse; inspected.

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	None	No.
No; no	No		No.
No	No	None	No.
No	No	One	No.
No		None	No.
No	No		No.
		None	No.
No	No	None	No.
No		None	No.
No	No	None	No.
No	No	None	No.
No	No	None	No.
No	No	None	No.
No	No	None	No.
Garbage burned	No	None	No.
Householders compelled to remove.	No	One tannery	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint is made to Board.	Contagious diseases.
Scugog	No M.H.O.; John Foy, Sec.	On complaint	Diphtheria, 1 case, 1 death.....
Strong	A. Carmichael, M. D.; John Carter, Sec.	Only when complaint is made.	....
Stephen	T. Wicket, M.D.; Chester Prouty, Sec.	General inspection.....	Diphtheria, 2 deaths; typhoid, 1 death; tuberculosis, 3 deaths..
Stanhope... ...	C. D. Curry, M.D.; F. Hoover, Sec.	Only on complaint.....	No contagious diseases.....
Stafford	No M.H.O.; Wm. Hawkins, Sec.	No inspection	No contagious diseases..... ...
Sombra	Dr. D. K. Slenton, M.H.O.; Orra Bishop, Sec.	Action taken when complaint is made.	Ten scarlatina, no deaths; 9 diphtheria, 3 deaths; 1 typhoid, 2 consumption, 2 deaths.
Tecumseth	W. C. Law, M. D.; H. ... stone, Sec.	.....	No contagious diseases ....
Thorah.....	A. Grant, M.D.; J. Mc Arthur, Sec.	Only on complaint.....	Diphtheria, 10 cases; 1 death...
Thessalon	No. M. H. O.; T. E. Clinton, Sec.	Action taken on complaint.	No contagious diseases.....
Tay..... .	No M. H. O.; S. L. Montgomery, Sec.	When complaint is made..	Scarlatina, several cases; typhoid, 1 case, 1 death.
Toronto	M. Sutton, M.D.; Wm. Cook, Sec.	Action taken on complaint.	Scarlatina, 11 cases; diphtheria, 1 case; typhoid, 4 cases; tuberculosis, 1 case.
Trafalgar	M. McCrimmon, M. D.; Charles Hall, Sec.	Only on complaint.....	Scarlatina, 5 cases, 1 death; typhoid, 3 cases; tuberculosis, 1 case, 1 death.

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give result of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Isolated at home	Not that I am aware of	No	No
		Yes	No
Isolation at home	Yes; results good	Yes	No
Isolation at home	No	Yes	No; no
No			No
Houses placarded; no isolation hospital.	Yes; where used entirely successful.	Yes	No; no
		None	No
Yes; no hospital	Yes; all cases where it was used recovered.	Yes	Yes
No		No	No; no
No	No	No	No; no
Isolated at home	Yes	Yes	No
As far as possible	No	Yes	No; no

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are farms for notification by teamsters and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If wells, state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred? and state whether the tuberculine test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by an officer of the Board?
Scugog	No	Wells	No	No slaughterhouses
Strong	No		No	No slaughterhouses
Stephen	Yes	Wells, 8 to 50 ft	No	Three; not licensed
Stanhope	No	Wells	No	None
Stafford		Wells, 16 to 20 feet	No	None
Sombra	No	Cisterns, 10 to 14 feet; wells, 60 to 130 feet.	No; no; no	Two; not licensed; don't know.
Tecumseth	No	Wells	No	None
Thorah	Yes	Wells; 15 to 18 feet	No; no	Two slaughterhouses
Thessalon	No	Wells and springs	No; no	One slaughterhouse; fed to hogs; no license.
Tay	No	Wells; average depth about 40 feet.	No; no	Three slaughterhouses; no license.
Toronto	No	Wells	No	Twelve slaughterhouses.
Trafalgar	Yes	Wells	No	Three slaughterhouses.

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is the cost calculated?	Is there a public sewerage system? If so, what proportion of houses to whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	None	No.
		None	No.
Not much attention given to this.	No	None	No.
	No	None	No.
No	No	None	No.
No	No	No	None.
		None	No.
No	No	None	No.
			No.
		None	No.
No	No	None	No.
No	No	None	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board?	Contagious diseases.
Tyendinaga	H. O. Lanfear, M D.; A. B. Randall, Sec.	No inspection	Diphtheria, 6 cases, 1 death; tuberculosis, 4 cases, 4 deaths.
Torbolton	G. H. Groves, M.D.....	General inspection	Diphtheria, 13 cases; a few cases of scarlatina; typhoid, 1 case.
Tosorontio.	J. J. Williams, M. D.; Thomas Irwin, Sec.	Only on complaint.....	Typhoid, 2 cases. ... .
Tilbury. North .	A. Lemire, M. D.; J. A. Trimblay, Sec.	Only on complaint.....	Tuberculosis, 3 cases. 3 deaths ..
Turnberry	C. A. Toole, M. D.; John Burgess, Sec.	Action taken only on complaint.	Scarlatina, 3 cases; typhoid, 3 cases; tuberculosis, 1 case, 1 death.
Usbo ne	A. K. Ferguson, M. D.; Francis Morley, Sec.	.....	Scarlatina, 8 cases, 1 death; diphtheria, 1 case; typhoid, 3 cases, none; tuberculosis, 15 cases, 2 deaths.
Uxbridge.....	R. E. Darling, M.D.; S. A. Flumerfelt, Sec.	Only on complaint.....	Scarlatina, 8 cases; diphtheria, 5 cases 1 death.
Unorganized Tp. Algoma.)	....	.....	No contagious diseases..... .
Verulam.	C. E Bonnell, M.D.; G. W. Taylor, Sec.	.....	Typhoid, 1 case, 1 death; tuberculosis, 3 cases, 3 deaths.
Vespra	Dr. Wallwin, Geo. Sneath, Sec.	Only on complaint.....	No contagious diseases..... ....
Wollaston	T. J. Kelly, M. D, ; Geo. Orr. Sec.	.....	....

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the publicschools? Does it require a certificate of vaccination from new school children each year?
Yes; no hospital.	....	Not always	No; no .....
.....	Anti-toxine used with satisfactory results.	....	.....
Yes	No	Yes	No; no .. ..
....	....	Yes	Yes.....
No hospital.....	... .	Under supervision of M. H. O.	No .....
Yes; no hospital	Yes.	Usually by attending physician.	.....
Isolated at home.....	Only used in one case ...	Yes; by M. H. O.....	No .....
.....	....	No	No .....
Yes.....	No	Under M. H. O	No; no .....
No	No	Yes	No .....
....	No	Yes	No .....

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and stat whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Tyendinaga	No	Wells and springs.....	No	Six slaughterhouses....
Torbolton	.....	.....	.....	.....
Tosorontio.	Yes.....	Wells; 18 feet.....	No	Two slaughterhouses; no inspection.
Tilbury, North..	Yes.....	Wells; 12 feet.....	No	None. .....
Turnberry	No	Wells; 10 to 35 feet.....	No	Five; none licensed....
Usborne.....	Yes.....	Wells; 20 to 40 feet	No; yes.....	Three slaughterhouses; not licensed.
Uxbridge.....	Yes.....	Wells; from 12 to 100 ft.	No	One; no license .....
Unorganized Tp. (Algoma)	No	Bad water.....	No	None. .....
Verulam.	No	Wells; 8 to 50 feet.....	No; yes.....	Two; offal fed to hogs.
Vespra	Yes...	Wells	No	None.....
Wollaston	No	Springs	No; no	None..... ....

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made. How is the cost calculated?	Is there a public sewerage system? If so what proportion of houses to whole is connected with public sewers.	State No. and kinds of noxious trades. (See sec. 63 Public Health Act). How licensed and regulated?	Have there been any prosecutions during the year under Public Health Act? State in detail the nature of the case, and results of same.
.....	.....	.....	No.
.....	.....	.....	No.
No	No.....	One tannery.....	No.
No	No.....	None.....	No.
No	No.....	None.....	No.
No	No.....	None.....	No.
No	No.....	None.....	No.
.....	.....	.....	No.
No	No	None.....	No.
No	No.....	None.....	No.
No	No.....	None.	No.

TOWNSHIPS.—*Continued.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it repeated at intervals every year? or is action taken only when complaint of nuisance is made to Board?	Contagious diseases.
Widdifield	J. B. Carruthers, M.D.; C. W. Thompson, Sec.	Only on complaint.....	No contagious diseases ....
Waterloo	H. G. Roberts, M.D. ; O. Rust, Sec.	Annual inspection	Diphtheria, 60 cases ; typhoid, 20 cases ; tuberculosis, 12 cases.
Walpole.....	No M. H. O.; Jas. Mowat, Sec.	Only on complaint.....	Scarlatiua,'1 case ; tuberculosis, 4 cases.
Williams, East .	John Gunn, M.D. ; David Wyllie, Sec.	Action on complaint.....	Typhoid, 1 case, 1 death.....
Wallace.....	L. W. Thompson, M.D.; R. G. Roberts, Sec.	Action on complaint.....	Typhoid, 1 case, 1 death .....
Watt	No M. H. O.; H. W. Gill, Sec.	Yes....	No contagious diseases.... .....
Wilmot	W. R. Nichols, M.D., J. A. Butler, M.D.; F. H. Holwell, Sec.	Yes.....	Diphtheria, 2 cases ; typhoid, cases, 1 death.
Whitby	J. J. Moore, M. D. ; D. Holiday, Sec.	Action on complaint	Tuberculosis, 2 deaths .....
Warwick	J. A. McLeay, M.D. ; W. H. Stewart, Sec.	Only on complaint.....	Scarlatina, 10 cases, 1 death ; diptheria, 9 cases, 2 deaths; typhoid, 7 cases ; tuberculosis. 2 cases, 2 deaths.
Woolwich	W. O. Robinson, M.D. ; J. L. Widman, Sec.	Action on complaint.....	Diphtheria, a number of cases...
Wawanosh, W.	T. E. Case, M.D. ; W. S. McCristie Sec.	Only on complaint	Tuberculosis, 2 cases .....

TOWNSHIPS.—*Continued.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
No hospital	No		No
Yes; no hospital	Yes; results good	Yes	Yes; no
Houses placarded		Generally left to physicians.	No; no
		No	No; no
Yes	Not generally used	Not under personal supervision of board.	No; no
			Yes
Yes	Yes; very satisfactory.		Yes
	No	Yes	Yes; no
Yes	Yes; results very satisfactory.	Yes, by M. H. O	No
General isolation of contagious diseases.	Anti-toxine favorably spoken of.	Yes	
Yes		Yes	No; no

TOWNSHIPS.—*Continued.*

Name of Municipality.	Are forms for notification by teachers and M. H. O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughter houses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board.
Widdifield	No	Springs	No inspection	Two slaughter houses; no license; fed to hogs.
Waterloo	Yes	Wells; average depth 25 feet.	Yes	15 slaughter houses ....
Walpole.....	Yes	Wells	No	One slaughter house: no license.
Williams, East ..	To M. H. O....	Wells, 16 to 20 feet	No	Two slaughter houses; no license.
Wallace	Yes	Wells	No; no	One; not licensed.....
Watt	Yes	Wells and springs	No; no	None .....
Wilmot	No	Generally wells	No	Three or four; under license.
Whitby	No	Wells, 20 to 50 feet	No	Two, not licensed.....
Warwick	Yes	Wells, 10 to 20 feet	No inspection	None .. ..
Woolwich	No	....	....	....
Wawanosh, W..	Yes	Wells, 20 to 30 feet	No	No slaughterhouses....

TOWNSHIPS.—*Continued.*

Is there systematic removal of garbage and night soil? If so on what basis of cost is the removal made. How is cost calculated?	Is there a public sewerage system? If so what proportion of houses of whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during year under Public Health Act? State in detail the nature of the case, and results of same.
No	No	None	No.
No	No	None	No.
No	No	None	No.
		None	No.
No	No	None	No.
No	No	One tannery; one cheese factory.	No.
Yes	No	None	No.
	No		No.
No	No	None	No.
No		One glue factory	No.
No	No	None	No.

TOWNSHIPS.—*Concluded.*

Name of Municipality.	Names of Medical Health Officer and Secretary of Board.	Is there general sanitary inspection? Is it reported at intervals every year? or is action taken only when complaint of nuisance is made to Board.	Contagious diseases.
Whitchurch	S. L. Friel, M.D.; J. C. Lundy, Sec.	Action upon notice	Scarlatina, 7 cases, 4 deaths ....
Wainfleet	W. B. Hopkins, M.D.....	Only when complaint is made.	Diphtheria, 30 to 40 cases, 4 deaths ; tuberculosis, 6 cases, 6 deaths.
Westminster ...	G. S. Rutledge, M.D.; H. Anderson, Sec.	General inspection.....	Tuberculosis, 7 deaths .....
Willoughby	M. K. Colliver, M.D. ; H. N. Beam, Sec.	Inspection on complaint ..	....
Walsingham, N.	J. M. Tweedale, M. D. ; John Phelan, Sec.	No inspection	Diphtheria, 1 death; tuberculosis, 2 deaths.
Wilberforce	J. Chanonhouse. M. D. ; Geo. Stone, Sec.	Action on complaint.....	Diphtheria, 9 cases, 2 deaths ; Tuberculosis, 2 cases, 2 deaths.
Woodhouse	J. F. Jolly, M.D. ; Frank Bowlby, Sec.	Only on complaint.....	Scarlatina, 4 cases ; typhoid, 1 case, 1 death ; tuberculosis, 2 cases, 2 deaths.
York	T. J. Page, M.D. ; W. A. Clarke, Sec.	General inspection, and report monthly.	Scarlatina, 87 cases ; diphtheria, 27 ; typhoid, 3 cases ; tuberculosis, not reported ; 8 deaths during the year.
Yonge & Escott, Front	J. W. Lane, M.D. ; John F. Kelly, Sec.	No action taken ; on complaint.	Diphtheria, 4 cases ; tuberculosis, 2 cases.
Zone	A. D. Graham, M. D. ; Henry Osborne, Sec.	Yes	Diphtheria, 4 cases, 1 death ....
Zorra, East	A. N. Hatson, M.D. ; Jas. Anderson, Sec.	Yes, of slaughter houses, piggeries. schools and cheese factories.	Scarlatina, 13 cases ; typhoid, 12 cases, 3 deaths ; tuberculosis. 2 cases.

TOWNSHIPS—*Concluded.*

Is isolation of contagious diseases systematically carried out? State methods adopted and whether any isolation hospital exists.	Is diphtheria anti-toxine in common use by physicians? Give results of treatment in all cases where possible.	Is disinfection after contagious diseases carried out under the personal supervision of an officer of the Board?	Does the Board make systematic inspection of the public schools? Does it require a certificate of vaccination from new school children each year?
Yes		Under direction of physician in attendance.	No
Yes; no hospital	Some doctors use it	No	No; no
		No	No
Yes	Yes	Yes	No; no
No	Think not in use	No	No
No; no hospital	No	Under direction of M.H.O.	No; no
To a certain extent	By some physicians; results good.	No	No
Yes	No report to board	Yes, under M.H.O. and Inspector.	Yes
No	No	No	No
As well as possible by the parties themselves.	In some cases, with success.	Yes	Yes
Yes	Yes, fairly successful	Occasionally	Yes; no

TOWNSHIPS.—*Concluded.*

Name of Municipality.	Are forms for notification by teachers and M.H.O. of contagious diseases supplied?	Give the source of water supply used on the premises. If from wells state usual depth of water bearing stratum.	Is there systematic inspection of dairy cows made during the year? Have cases of tuberculosis occurred, and state whether the tuberculin test has been used.	How many slaughterhouses in municipality? Are they licensed on evidence of being kept in good sanitary condition? How is offal disposed of? Is there systematic inspection of carcasses by any officer of the Board?
Whitchurch	Yes	Wells	No	Two; offal fed to hogs.
Wainfleet	No	Wells	No; no	No license .....
Westminster ...	Yes	Wells, 20 to 70 feet	No	Three slaughterhouses; offal fed to hogs.
Willoughby	No	Wells and Niagara river.	No	Three; not licensed....
Walsingham, N.	No	Wells, 6 to 20 feet.....	No	One slaughterhouse....
Wilberforce	No	Wells	No; no	No slaughterhouses....
Woodhouse	Yes	Wells	No; no	Two slaughterhouses; yes.
York	Yes	Wells, 35 feet	No; dairies inspected by officers of Toronto.	About 25; yes; in most cases removed; premises inspected.
Yonge & Escott, Front	No	Wells	No	None. .....
Zone	No	Wells	No	Three; no; buried; no
Zorra, E	Yes	Wells, 30 to 50 feet	No	Eight; buried or burnt; no.

TOWNSHIPS—*Concluded.*

Is there systematic removal of garbage and night soil? If so, on what basis of cost is the removal made? How is cost calculated?	Is there a public sewerage system? If so, what proportion of houses of whole is connected with public sewers?	State No. and kind of noxious trades. (See sec. 63 Public Health Act.) How licensed and regulated?	Have there been any prosecutions during year under Public Health Act? State in detail the nature of the case, and results of same.
Yes	No	None	No.
Householder	No	None	No.
No	No	None	No.
No	No	No	No.
No	No	None	No.
No	No	None	No.
No	No	No	No.
No	No	Two; Harris factory and Government piggery.	No.
No	No	None	No.
Yes; $4 per year in each case.	No	None	No.
	No	None	No.

LOAN CORPORATIONS STATEMENTS:

BEING

FINANCIAL STATEMENTS MADE BY

BUILDING SOCIETIES, LOAN COMPANIES, LOANING LAND COMPANIES, AND TRUSTS COMPANIES.

FOR THE YEAR ENDING

31ST DECEMBER, 1897.

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO.

TORONTO:
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1898.

To the Honourable J. M. Gibson, Q.C., M.P.P.,

Commissioner of Crown Lands.

Sir,—I have the honour to present herewith the first Annual Statements made by Loan Corporations under the new Act (R. S. O. 1897, c. 205). Prefixed to these statements will be found a copy of the official blank form. As might of course have been anticipated, a little difficulty arose from dissimilar forms of bookkeeping, but the companies have already taken steps to assimilate their books to the official form of statement. Another difficulty arose in a few cases from the fact that the fiscal year of the company did not formerly end with the 31st December.

The Companies included in the Report are here classified (as in the new Act) into:

Loan Companies.

Loaning Land Companies.

Trusts Companies.

The Loan Companies forming the first mentioned Class, are further sub-divided into:

A. Companies having only permanent stock.

B. Companies having withdrawable as well as permanent stock, or having withdrawable stock only.

In some cases (as will be seen from the table at the end of the Report) the Financial Statement covered the fiscal year of the Company, and not the official year ending 31st December, 1897.

I have the honour to be, Sir,
Your obedient servant,

J. HOWARD HUNTER,
Registrar of Loan Corporations.

Parliament Buildings,
Toronto, 4th July, 1898.

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Appendix.—*Re* Canadian Mutual Loan and Investment Company and a By-law of the said Company purporting to create Permanent Capital in shares of $10.—Judgment of Registrar.

FORM OF ANNUAL STATEMENT

SUPPLIED TO LOAN CORPORATIONS FOR PURPOSES OF THIS REPORT.

Note.—By comparing with this form the statement actually made by each company and printed within, the fulness and completeness of the company's statement may be tested. In the case of some statements where a want of detail is noticeable, the companies have explained that their accounts will hereafter be kept in such form as to supply the necessary particulars.

FORM OF ANNUAL STATEMENT.

The following is a copy of the form supplied to each Loan Corporation for purposes of its Annual Statement for the year ending 31st December, 1897 :

ANNUAL STATEMENT

Of the condition and Affairs of the (Name of Corporation).....
of..... .....*at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.*

The Corporation was incorporated under the laws of.....*on the*..... ..... *day of*..... .....*18*.....

The Head Office of the Corporation is at No..... (Name of Street)..... .. . .*in the* (City, Town or Village)..... .....*of*.....*in the* (Province, State, etc. ....*of*.....

The Chief Agency for Ontario (If the Corporation's Head Office is elsewhere than in Ontario) *is situated at No*... ....(Name of Street)..... . *Street, in the* (City, Town, etc.)..... *of*..... .....*in the Province of Ontario.*

The Chief Agent and Attorney for Ontario (If Corporation's Head Office is elsewhere than in Ontario) *is* (Name)... ....*and his address is*.....*in the Province of Ontario.*

The Board is constituted of.....*Directors holding office for*.....*years.*

The Directors and Chief Executive Officers of the Corporation at the 31st December, 1897, were as follows :

Names of Directors and Chief Executive Officers	Designation of Office.	Address.	Term of Office.	
			Began (Date).	Will end (Date).
	President.			
	Vice-President.			
	Manager.			
	Secretary.			

A. Permanent Capital Stock : Total amount authorized, $; Total amount subscribed, $ as more particularly set out in Schedule A hereto.

B. Terminating or Withdrawable Stock : Total amount subscribed, $, made up as follows :—

		Total.		Total.
Shares Fully Paid Stock.....at $	per Share..$		on which there has been paid $	
Shares "Prepaid" Stock (other than above..... at $	per Share..$		on which there has been paid $	
Shares Instalment Stock (payable by fixed periodical payments) .....at $	per Share..$		on which there has been paid $	

Total number of Shares , subscribed by Shareholders, who have paid thereon the total of $

SCHEDULE B.

Shares of Terminating or Withdrawable Stock.	Fully Paid.		Prepaid.		Instalment.		Total.
	No.	Amount	No.	Amount	No.	Amount	
		$		$		$	
Number and amount in force at 31st Dec., 1896..... ...							
" issued during 1897.....							
Gross total in force at any time in 1897							
Deduct as follows :—	No of shares.	Amount $					
Withdrawn and paid off during 1897.							
Retired by Corporation during 1897 .							
Converted into Permanent Stock during 1897.....							
Forfeited and lapsed during 1897....							
Total deductions							
Net total remaining in force at 31st December, 1897							
Total amount distributed or credited in 1897 :							
(1) As interest.....							
Rate of such interest, per cent. per annum.....							
(2) As dividends out of profits							
Rate or rates per cent. of such dividends.....							

BALANCE SHEET AS AT THE 31st DECEMBER, 1897.

DR. CAPITAL AND LIABILITIES.

Item No.	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).	$	cts.	$	cts.
	A. PERMANENT CAPITAL STOCK OR SHARES:—				
1.	(a) *Ordinary Joint Stock* Capital fully called: Total called $.....Total paid thereon.....				
2.	(b) *Ordinary Joint Stock* Capital....% called: Total called $.....Total paid thereon.....				
3.	(c) *Ordinary Joint Stock* Capital....% called: Total called $.....Total paid thereon.....				
4.	(d) Dividends declared in respect of (1), (2) or (3), but not yet paid.....				
5.	(e) Unappropriated profits in respect of (1), (2) or (3)				
6.	(f) Reserve Fund in respect of (1), (2) or (3).				
7.	(g) Contingent Fund in respect of (1), (2) or (3)				
8.	(h) *Instalment Permanent Stock* (payable by fixed periodical payments): Total subscribed $.....on which has been paid.....				
9.	(i) Dividends declared on (8) but not yet paid.....				
10.	(j) Unappropriated profits on (8)				
11.	(k) Reserve Fund in respect of (8)				
12.	(l) Contingent Fund in respect of (8).....				
13.	(m) Instalments or Premiums on (8) paid in advance				
	B. TERMINATING CAPITAL STOCK OR SHARES:—				
14.	(a) *Fully paid Stock*: Total in force.....shares at $..... .per share....				
15.	(b) Profits or accrued interest on (14) credited or appropriated but not yet paid				
16.	(c) Profits or accrued interest on (14) not credited or appropriated				
17.	(d) *Prepaid Stock*: Total in force.....shares at $.....per share, on which has been paid.....				
18.	(e) Profits or accrued interest on (17) credited or appropriated but not yet paid				
19.	(f) Profits or accrued interest on (17) not credited or appropriated				
20.	(g) *Instalment Stock*: Total issue now in force.....shares at $.....per share $..... ..... on which has been paid.....				
21.	(h) Profits or accrued interest on (20) credited or appropriated but not paid out				
22.	(i) Profits or accrued interest on (20) not credited or appropriated				
23.	(j) Instalments or Premiums paid on (20) in advance.....				
	C. LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS OTHER THAN ALREADY SHOWN UNDER A OR B, VIZ.:—				
24.	.....				
25.	.....				
26.	.....				
	LIABILITIES TO THE PUBLIC.				
27.	Deposits.....				
28.	Interest on deposits, due, or accrued, or capitalized.....				
29.	Debentures issued in Canada				
30.	Interest due and accrued on (29).....				
31.	Debentures issued elsewhere than in Canada				
32.	Interest due and accrued on (31)				
33.	Debenture stock issued in Canada.....				
34.	Interest due and accrued on (33)				
35.	Debenture stock issued elsewhere than in Canada.....				
36.	Interest due and accrued on (35)				
37.	Owing to Banks (including interest due or accrued).....				
38.	Due on Bills Payable other than (37), including interest due or accrued).....				
39.	Due on Loans in process of completion or to pay assumed mortgages				
40.	Other liabilities to the public, viz.:—				
41.	(a)				
42.	(b)				
43.	(c)				
	Total Actual Liabilities.....				

BALANCE SHEET AS AT 31ST DECEMBER, 1897.—*Continued.*

DR.—*Continued.*

CONTINGENT LIABILITIES.	$	cts.	$	cts.
44. Claims against the Corporation not acknowledged as debts, viz. :—				
45. (a)				
46. (b)				
47. (c)				
48. Money for which the Corporation is contingently liable, viz. :—				
49. (a) Principle guaranteed				
50. (b) Interest guaranteed				
51. (c) Trust Funds invested but not guaranteed :—				
52. (1) Principal				
53. (2) Interest				
54. (d) Trust Funds uninvested not bearing interest and not guaranteed				
Total Contingent Liabilities				
Gross Total Liabilities, Actual and Contingent				

CR.	$	cts.	$	cts.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.				
A.—IMMOVABLE PROPERTY OWNED BENEFICIALLY BY THE CORPORATION :—				
1. (a) Office premises situated as follows :—				
2. (I) At ..... held in freehold				
3. (II) At ..... held in ..... hold				
4. (III) At ..... held in ..... hold				
5. (b) Freehold land (including buildings) other than foregoing				
6. (c) Leasehold land (including buildings) other than foregoing				
7. (d)				
8. (e)				
B.—DEBTS SECURED BY MORTGAGES OF LAND :—				
9. (a) Debts (other than item 10) secured by mortgages of land				
10. (b) Debts secured by mortgaged land held for sale				
11. (c) Interest due or accrued on items 9 and 10 and not included therein				
12. (d) Of the debts mentioned in items 9, 10 and 11 the sum of $ ..... is due by directors or officers of the Corporation (Not extended)				
C.—DEBTS NOT ABOVE ENUMERATED FOR WHICH THE CORPORATION HOLDS SECURITIES AS FOLLOWS :—				
13. (a) Debts secured by accepted Bills of Exchange				
14. (b) Debts secured by Municipal Bonds or Debentures				
15. (c) Debts secured by Public School Debentures				
16. (d) Debts secured by Loan Corporations' Debentures				
17. (e) Debts secured by Dominion Government Stock or Bonds				
18. (f) Debts secured by Stock or Bonds of any of the Provinces of Canada				
19. (g) Debts secured by the Stock or Bonds of other Governments				
20. (h) Debts secured only by Permanent Stock or Shares of the Corporation				
21. (i) Debts secured only by Terminating Stock or Shares of the Corporation				
22. (j) Debts secured by				
23. (k) Debts secured by				
24. (l) Debts secured by				
25. (m) Debts secured by				
26. (n) Interest due or accrued on items 14 to 25 and not included therein				
D.—UNSECURED DEBTS :—				
27. (a)				
28. (b)				
29. (c)				
30. (d) Interest due or accrued on items 27 to 29 and not included therein				

BALANCE SHEET AS AT 31st DECEMBER, 1897.—*Continued.*

CR.—*Continued.*

	$	cts.	$	cts.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.—*Continued.*				
E.—CASH :—				
31. (*a*) On hand				
32. (*b*) In bank as follows :—				
33. (I) In the.....Bank at				
34. (II) In the.....Bank at				
35. (III) In the.....Bank at				
36. (IV) In the.....Bank at				
F.—ASSETS NOT HEREINBEFORE MENTIONED :—				
37. (*a*)				
38. (*b*)				
39. (*c*)				
40. (*d*)				
41. (*e*)				
42. (*f*)				
Total of assets owned beneficially by Corporation				
II.—ASSETS NOT OWNED BENEFICIALLY BY CORPORATION BUT FOR WHICH THE CORPORATION IS ACCOUNTABLE:				
A.—AS GUARANTOR.				
(*a*) Mortgage securities :—				
43. (I) Principal				
44. (II) Interest due and accrued				
(*b*) Other securities :—				
45. (I) Principal				
46. (II) Interest due and accrued				
B.—AS TRUSTEE, REPRESENTATIVE, GUARDIAN, OR AGENT (WITHOUT GUARANTEE.)				
(*a*) Mortgage securities :—				
47. (I) Principal				
48. (II) Interest due and accrued				
(*b*) Other securities :—				
49. (I) Principal				
50. (II) Interest due and accrued				
51. (*c*) Unsecured debts				
52. (*d*) Uninvested Trust funds				
Total of Assets II				
Gross total of Assets I and II				

RECEIPTS FOR THE YEAR ENDING 31st DECEMBER, 1897.

Item No.	I.—RECEIVED BY THE CORPORATION FOR ITS OWN USE.	Amount carried to earnings, maintenance or contingent account. (Column 1.)		Amount carried to Capital Account. Terminating Capital. (Column 2.)		Amount carried to Capital Account. Permanent Capital including Reserve. (Column 3.)		Total. (Column 4.)	
		$	c.	$	c.	$	c.	$	c.
	A.—Balances from 31st December, 1896:—								
1.	(a) Capital Account								
	(b) Cash (not already shown under (1))								
2.	(i) On hand								
3.	(ii) In bank								
	B.—Sums Received Wholly or Partly on Capital Stock:—								
4.	(a) Calls on Joint Stock Permanent Capital								
5.	(b) Premiums on (4)								
6.	(c) Sales of fully paid Building Society Stock								
7.	(d) Sales of prepaid Building Society Stock								
8.	(e) Dues on Instalment Building Society Stock								
9.	(f) Premiums on (6), (7) and (8)								
	C.—Receipts on Account of Investments, Loans or Debts.								
	(a) On Mortgages of Realty:								
10.	(i) Principal								
11.	(ii) Interest								
	(b) On other securities:—								
12.	(i) Principal								
13.	(ii) Interest or Dividends								
	(c) Unsecured Debts								
14.	(i) Principal								
15.	(ii) Interest								
	D.—Receipts from Real Estate Owned Beneficially by Corporation:—								
16.	(a) Sales (not included in any of foregoing items)								
17.	(b) Rent								
	E.—Miscellaneous:—								
18.	(a) Commission, Brokerage (or Remuneration as Corporate Agent, Trustee, etc.)								
19.	(b) Premium or Bonus on Loans								
20.	(c) Membership or Entry Fees (being income of corporation)								
21.	(d) Fines								
22.	(e) Forfeiture of Lapses. (*Extend into Column 1*)								
23.	(f) Revivals of Terminating Stock. (*Extend into Column 2*)								
24.	(g) Conversions of Terminating Stock into Permanent Stock (*Extend into Column 3*)								
	F.—Borrowed Money:—								
25.	(a) Bank or other advances, discounts or overdrafts								
26.	(b) Borrowed by taking deposits								
27.	(c) Borrowed on Debentures								
28.	(d) Borrowed on Debenture Stock								
29.	(e) Borrowed otherwise, viz.:—								
30.	G.—Receipts from Other Sources, viz:—								
	Totals								

RECEIPTS FOR THE YEAR ENDING 31st DECEMBER, 1897.—*Continued.*

II.—RECEIVED AS CORPORATE TRUSTEE, REPRESENTATIVE, GUARDIAN OR AGENT IN TRUST.	Amount carried to earnings, maintenance or contingent account.		Carried to Capital Account.		Total.	
A.—Balances from 31st December, 1896:—						
Item No.	$	c.	$	c.	$	c.
31. (*a*) Capital Account						
(*b*) Cash (not included in 31):—						
32. (i) On hand						
33. (ii) In bank						
B.—Received on Account of Investments, Loans or Debts:—						
34. (*a*) On Mortgages: Principal, $..... Interest, $						
35. (*b*) On other securities: Principal, $..... Interest, $						
36. (*c*) On Unsecured Debts: Principal, $..... Interest, $						
C.—Receipts from Real Estate:—						
37. (*a*) Sales (not included in foregoing items)						
38. (*b*) Rents						
D.—Receipts from Other Sources, viz.:—						
39. (*a*)						
40. (*b*)						
41. (*c*)						
Totals						

EXPENDITURE FOR THE YEAR ENDING 31st DECEMBER, 1897.

I.—EXPENDED ON CORPORATION ACCOUNT.

Item No.		Amount carried to Earnings, Maintenance or Contingent Account. (Column 1.)		Amount carried to Capital Account. Terminating Capital. (Column 2.)		Amount carried to Capital Account. Permanent Capital, including Reserve. (Column 3.)		Total. (Column 4.)	
	A.—Sums Loaned or Invested on Capital Account:—	$	c.	$	c.	$	c.	$	c.
1.	(a) Loaned on Mortgages of Realty								
	(b) Loaned or invested in other Securities, viz.:—								
2.	(i)								
3.	(ii)								
4.	(iii)								
5.	(iv)								
6.	(c) Real Estate purchased								
7.	(d) Incumbrances on Realty paid off								
	B.—Expended on Stock Account:—								
8.	Dividends paid on Permanent Stock. (*Extend into Column 1*)								
9.	Dividends paid on Terminating Stock. (*Extend into Column 1*)								
10.	Interest paid on Terminating Stock. (*Extend into Column 1*)								
11.	Paid for Terminating Stock withdrawn. (*Extend into Column 1 or 2, divide between 1 and 2, as case may be*)								
12.	Paid for Terminating Stock matured. (*Extend as in 11*)								
13.	Profits paid on (11) and (12). (*Extend as in 11*)								
14.	Paid for Terminating Stock retired. (*Extend into Column 2*)								
15.	Terminating Stock forfeited or lapsed. (*Extend into Column 2*)								
16.	Terminating Stock converted into Permanent. (*Extend into Col. 2*)								
17.	Terminating Stock revived. (*Extend into Column 1*)								
	C.—Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:—								
18.	(a) Bank Account (Principal and Interest)								
19.	(b) Deposits: Principal, $.... Interest, $								
20.	(c) Debentures issued in Canada: Principal, $.... Interest, $...								
21.	(d) Debentures issued elsewhere: Principal, $.... Interest, $...								
22.	(e) Debenture Stock issued in Canada: Principal, $.. Interest, $..								
23.	(f) Debenture Stock issued elsewhere: Principal, $.. Interest, $..								
24.	(g) Guarantees paid: Principal, $.... Interest, $								
	D.—Management Expenses (other than foregoing):—								
25.	(a) Salaries and Fees								
26.	(b) Commission or Brokerage								
27.	(c) Advances to Agents								
28.	(d) Stationery, Postage, Printing and Advertising								
29.	(e) Law Costs								
30.	(f) Fuel, Rent, Taxes (other than in 32) and Rates								
31.	(g) Travelling Expenses								
32.	(h) Insurances or taxes advanced on property mortgaged to the corporation								
	E.—Other Expenditures, viz.:—								
33.	(a)								
34.	(b)								
35.	(c)								
36.	(d)								

	F.—Balance	$	cts.
37.	(a) Cash on hand		
	(b) Cash in various banks as follows:		
38.	(i)		
39.	(ii)		
40.	(iii)		
41.	(iv)		

	Totals								

EXPENDITURE FOR THE YEAR ENDING 31st DECEMBER, 1897.—*Con.*

II.—EXPENDED ON TRUST OR AGENCY ACCOUNT.

Item No.	A.—Loaned or Invested on Capital Account.	Amount carried to Earnings, Maintenance or Contingent Account. $	c.	Amount carried to Capital Account. $	c.	Total. $	c.
42.	(*a*) Loaned on Mortgages of Realty						
	(*b*) Loaned or invested on or in other Securities, viz.:—						
43.	(i)						
44.	(ii)						
45.	(iii)						
46.	(iv)						
47.	(*c*) Real Estate purchased						
	(*d*) Incumbrances on Realty paid off, viz.:—						
48.	(i) Principal						
49.	(ii) Interest						
	B.—Other Expenditures :—						
50.	(*a*) Commission or Remuneration paid for Management of Estate, Trust or Agency (including item 26)						
51.	(*b*) Rents, Taxes and Rates						
52.	(*c*) Debts or obligations wholly or partly paid: Principal, $... Interest, $...						
53.	(*d*)						
	C.—Balance :—	$ cts.					
54.	(*a*) Cash on hand						
	(*b*) Cash in various banks as follows :—						
55.	(i)						
56.	(ii)						
57.	(iii)						
	Totals						

Miscellaneous Statement for the year ending 31st December, 1897.

	$	c.
1. Amount of Debentures issued by the Corporation in Canada which will mature in 1898		
2. Amount of Debentures issued by the Corporation elsewhere which will mature in 1898		
3. Amount of other existing obligations of the Corporation which will mature in 1898		
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898		
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits ? on debentures ? on debenture stock ?		
6. Average rate of interest per annum received by the Corporation during 1897 on mortgages of realty ? on other securities ?		
7. Of the mortgages held by the Corporation $ is on realty situate in Ontario, and $ is on realty situate elsewhere		
8. Loans written off or transferred to real estate account during 1897		
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897 ? No. Amount		
10. Aggregate market value of the land mortgaged to the Corporation $		
11. How often are the securities held by the Corporation valued ?		
12. What officers of the Corporation are under bond and for what sum respectively ?		
13. When were the accounts of the Corporation last audited ?		
14. Names and addresses of the auditors respectively for 1897 and for 1898 (if appointed)		

County of }
}

We, President and Secretary of the Loan Corporation known as the , severally make oath and say, and each for himself says, that we are the above described officers of the said Corporation, and that we have each of us individually the means of verifying the correctness of the statement within contained of the affairs of the said Corporation, and that on the 31st of December, 1897, all the above described assets were the absolute property of the said Corporation, free and clear from any liens or claims thereon, except as hereinbefore stated, and we are satisfied that the foregoing statement, with the schedules and explanations herein contained and hereunto annexed, are a full and correct exhibit of all the liabilities and assets and of the income and expenditure, and of the general condition and affairs of the said Corporation on the 31st day of December, 1897, and for the year ending on that day.

Sworn before me at the in the County of } .....*President.*
this day of A.D. 1898. } .....*Secretary.*
.....

Attach to this Annual Statement a certified copy of the Statement or Statements furnished to shareholders during the year ending 31st December, 1897; also copy of the Auditors' Certificate. Loan Corporations Act, sections 92, 93 and 100.

I. LOAN COMPANIES.

A. COMPANIES HAVING ONLY PERMANENT STOCK.

DETAILED REPORTS OF THE SEVERAL COMPANIES.

AGRICULTURAL SAVINGS AND LOAN COMPANY.

Head Office, London, Ont.

Constating Instruments.*

1872. Declaration of the Agricultural Investment Society and Savings Bank, under Consolidated Statutes of Upper Canada (1859), chap. 53, filed with the Clerk of the Peace for the County of Middlesex, Ontario, May 3, 1872.

1873. Instrument amalgamating the Society (under the above name) with the London Freehold and Leasehold Land Benefit Building Society, and with the London Union Savings Loan and Permanent Investment Society; filed in above office April, 1873.

1877, July 23. Order-in-Council, Canada, changing corporate name to Agricultural Savings and Loan Company.

1877, July 28. Order-in-Council, Ontario, making same change of corporate name.

Lending and borrowing powers: derived from the successive Public General Acts of the Province; Consolidated Statutes of Upper Canada, chap. 53; R.S.O. 1877, c. 164; R.S.O. 1887, c. 169; R.S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Agricultural Savings and Loan Company of London, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 109 Dundas street, in the City of London, in the Province of Ontario.

The Board is constituted of five directors, holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Daniel Regan	President	London, Ont ..	February 10th, 1897	February 17th, 1898.
W. J. Reid....	Vice-President ..	"	"	"
Thomas McCormick	Director	"	"	"
Thomas Beattie, M.P....	Director	"	"	"
Thomas H. Smallman ...	Director	"	"	"
C. P. Butler	Secretary.....	"	.....	.....

* In this Report the phrase "Constating Instruments" is used as in law books to signify the document or collected documents which fix the purposes, constitution and powers of the corporation. The original instruments mentioned in this Report or copies of the originals are in nearly all cases filed in the Department of Insurance for Ontario.—J. H. H.

A. Permanent capital stock: Total amount authorized, $1,000,000; total amount subscribed, $630,200, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a) *Fixed and Permanent Capital Stock created by virtue of Building Society Acts.*

Description.	No. of shares.	Par value of shares.
		$ c.
1. Fully paid	12,585	629,250 00
2. Prepaid	19	294 53
Totals	12,604	629,544 53

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

Item No.		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	A.—*Permanent Capital Stock or Shares.*		
1.	(a) Ordinary joint stock capital fully called: Total called $		
	total paid thereon	629,544 53	
4.	(d) Dividends declared in respect of (1), (2) or (3),* but not yet paid	18,877 50	
5.	(e) Unappropriated profits in respect of (1), (2) or (3)	3,730 89	
6.	(f) Reserve fund in respect of (1), (2) or (3)	160,000 00	
			812,152 92
	LIABILITIES TO THE PUBLIC.		
27.	Deposits	527,924 96	
29.	Debentures issued in Canada	503,760 00	
31.	Debentures issued elsewhere than in Canada	224,445 63	
32.	Interest due and accrued on (31)	8,388 61	
39.	Due on loans in process of completion or to pay assumed mortgages	6,410 66	
40.	Other liabilities to the public, viz.:		
41.	(a) Expense sterling debentures	175 00	
42.	(b) Commission on loans	228 50	
43.	(c) Federal Bank	11 25	
	(e) Expense account	255 00	
	(f) Solicitors' fees, etc	100 00	
			1,271,699 61
	Total actual liabilities		2,083,852 53

* See Form of Annual Statement, p. 4, *supra*.

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows:—		
2. (i) At London, held in freehold	28,000 00	
5. (*b*) Freehold land (including buildings) other than foregoing	1,455 65	29,455 65
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	1,960,036 83	
10. (*b*) Debts secured by mortgaged land held for sale	23,553 70	1,983,590 53
C.—*Debts not above Enumerated for which the Corporation holds Securities as follows:*		
14. (*b*) Debts secured by Municipal Bonds or Debentures	504 61	
20. (*h*) Debts secured only by permanent stock or shares of the corporation	2,125 65	2,630 26
E.—*Cash.*		
31. (*a*) On hand	3,412 74	
32. (*b*) In bank	63,419 60	66,832 34
F.—*Assets not Hereinbefore Mentioned.*		
37. (*a*) Office furniture	500 00	
38. (*b*) Rents accrued	843 75	1,343 75
Total of assets owned beneficially by corporation		2,083,852 53

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
	I.—Received by the Corporation for its Own use.	$ c.	$ c.	$ c.
	A.—*Balances from 31st December, 1896.*			
1.	(*a*) Capital account		2,514 44	2,514 44
2.	(i) On hand	1,907 94		1,907 94
3.	(ii) In bank	36,052 85		36,052 85
	C.—*Receipts on Account of Investments, Loans or Debts.*			
	(*a*) On mortgages of realty :—			
10.	(i) Principal	198,486 52		198,486 52
11.	(ii) Interest	104,801 90		104,801 90
	(*b*) On other securities :—			
12.	(i) Loans on stock	219 07		219 07
	D.—*Receipts from Real Estate owned Beneficially by Corporation.*			
16.	(*a*) Sales (not included in any of foregoing items)	10,562 33		10,562 33
17.	(*b*) Rents, offices	1,698 00		1,698 00
	E.—*Miscellaneous.*			
18.	(*a*) Commission, brokerage (or remuneration as corporate agent, trustee, etc.)	114 14		114 14
	F.—*Borrowed Money.*			
26.	(*b*) Borrowed by taking deposits	513,527 27		513,527 27
27.	(*c*) Borrowed on debentures	216,059 97		216,059 97
	G.—*Receipts from other Sources, viz.:*			
30.	(*a*) General interest	788 32		788 32
	(*b*) Assumed mortgages	6,599 52		6,599 52
	Totals			1,093,332 27

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I.—Expended on Corporation Account.		
	A.—*Sums Loaned or Invested on Capital Account.*	$ c.	$ c.
1.	(*a*) Loaned on mortgages of reality	238,936 13	238,936 13
7.	(*d*) Incumbrances on realty paid off	14,243 12	14,243 12
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock. (*Extend into Column 1*)	37,605 22	37,605 22
	C.—*Borrowed Money (other than foregoing) or Interest thereon Paid, viz.:*		
19.	(*b*) Deposits: Principal, $522,033.34; interest, $616.27	522,649 61	522,649 61
20.	(*c*) Debentures issued in Canada: Principal, $163,555.00; interest, $22,174.51	185,729 51	185,729 51
21.	(*d*) Debentures issued elsewhere: Principal, $7,299.98; interest, $8,062.54	15,362 52	15,362 52
	D.—*Management Expenses (other than foregoing.)*		
25.	(*a*) Salaries and fees (including auditors)	4,418 51	4,418 51
26.	(*b*) Commission or brokerage	3,062 92	3,062 92
28.	(*d*) Stationery, postage, printing and advertising	777 35	777 35
29.	(*e*) Law costs	132 85	132 85
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates	1,520 14	1,520 14
31.	(*g*) Travelling expenses, $493.30; inspector, $1,000.00	1,493 30	1,493 30
	E.—*Other Expenditures, viz.:*		
33.	(*a*) Sundries	61 45	61 45
34.	(*b*) Insurance on company's building	156 85	156 85
35.	(*c*) Guarantee premiums	120 00	120 00
36.	(*d*) Repairs to company's buildings	230 45	230 45
	F.—*Balance.*		
37.	(*a*) Cash on hand $3,412 74		
	(*b*) Cash in various banks 63,419 60	66,832 34	66,832 34
	Totals		1,093,332 27

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the corporation in Canada which will mature in 1898	140,300 00
2. Amount of debentures issued by the corporation elsewhere which will mature in 1898	28,805 80
3. Amount of other existing obligations of the corporation which will mature in 1898, assumed mortgages exclusive of deposits	6,138 17
4. Amount of securities held by the corporation which will mature and become payable to the corporation in 1898	221,330 55
5. Average rate of interest per annum paid by the corporation during 1897 on deposits, 3.607; on debentures, 4.241; on debenture stock, nil	
6. Average rate of interest per annum received by the corporation during 1897 on mortgages of realty, 5.74; on other securities, nil	
7. Of the mortgages held by the corporation, $1,977,179.87 is on realty situate in Ontario, and none on realty situate elsewhere	
8. Loans transferred to real estate account during 1897	17,637 22
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the corporation in 1897, No. 6; amount	12,447 38
10. Aggregate market value of the land mortgaged to the corporation	3,892,405 00
11. How often are the securities held by the corporation valued? Annually.	
12. (*a*) What officers of the corporation are under bond and for what sum respectively? Manager, $10,000; teller, $15,000; mortgage clerk, $2,000; ledger keeper, $2,000.	
13. When were the accounts of the corporation last audited? For quarter ending 31st December. 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). For 1897, George F. Jewell, F.C.A., and Andrew Dale, London.	

THE ATLAS LOAN COMPANY.

Head Office, St. Thomas, Ont.

Constating Instruments.

1887. Incorporated as "The St. Thomas Loan Company" by declaration under R.S.O. 1887, c. 169, filed with the Clerk of the Peace for the County of Elgin, 4th August, 1887.

1891. 14th July, Order-in-Council, Ontario, changing corporate name to "The Atlas Loan Company."

1898. Special Act of Dominion of Canada incorporating the Atlas Loan Company, fixes the authorized capital stock at $2,000,000 divided into shares of $100; defines power to hold real estate, power to lend and power to borrow. Section 11 enacts: "Nothing herein contained shall be construed to exempt the company from the effect of any Act of any Province of Canada respecting building societies or loan companies which carry on business in such Province, and the head office of which society or company is in the Province."

Lending and borrowing powers: derived from R.S.O. 1887, c. 169, as continued by R.S.O. 1897, c. 205; derived also from the special Act of the Dominion above cited.

Annual Statement

Of the condition and affairs of the Atlas Loan Company of St. Thomas, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the corporation is at No. 424 Talbot Street in the City of St. Thomas, in the Province of Ontario.

The Board is constituted of nine directors holding office for two years, four retiring one year and five the next.

The directors and chief executive officers of the corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Hon. R. Harcourt	President	Toronto, Ont.	Feb'y, 1896	Feb'y. 1898.
W. H. Murch	Vice-President	St. Thomas, Ont.	" "	" "
F. R. McDonald	Director	" "	" "	" "
R. Potts	Director	" "	" "	" "
W. Reekie	Director	" "	" 1897	" 1899.
D. McLarty	Director	" "	" "	" "
M. Payne	Director	Port Stanley	" "	" "
H. Thorne	Director	Toronto	" "	" "
J. Flett	Director	"	" "	" "
A. E. Wallace	Manager	St. Thomas	" "	" "
T. Logg	Accountant	"	" "	" "

A.—Permanent capital stock: Total amount authorized, $2,000,000; total amount subscribed, $1,000,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a)—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the company.
	No. of shares.	Par value.	$ c.	$ c.	$ c.
1.—Fully paid.....	20,000	$50	1,000,000 10	300,000 00	700,000 00

(b) Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or Private Acts.—None.

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS.)		
Item No. A.—*Permanent Capital Stock or Shares.*		
2. (*b*) Ordinary Joint Stock capital 5 per cent. called; total called $50,000; total paid thereon.....	300,000 00	
5. (*e*) Unappropriated profits in respect of (1), (2) or (3).....	543 83	
6. (*f*) Reserve fund in respect of (1), (2) or (3).....	45,000 00	
		345,543 83
LIABILITIES TO THE PUBLIC.		
27. Deposits.....	301,833 33	
29. Debentures issued in Canada.....	115,900 00	
31. Debentures issued elsewhere than in Canada.....	16,752 58	
		434,485 91
Total actual liabilities.....		780,029 74

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows:—		
2. (i) At St. Thomas, Ontario, held in freehold		8,500 00
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	718,820 90	
10. (*b*) Debts secured by mortgaged land held for sale	4,870 01	723,690 91
C.—*Debts not above enumerated for which the Corporation holds Securities as follows:*		
16. (*d*) Debts secured by Loan Corporations' debentures	350 00	
20. (*h*) Debts secured only by permanent stock or shares of the corporation	7,816 00	8,166 00
D.—*Unsecured Debts.*		
27. (*a*) Debenture suspense account		400 00
E.—*Cash.*		
32 (*b*) In banks		39,272 83
Total of assets owned beneficially by corporation		780,029 74

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
	I.—Received by the Corporation for its own use.		
	A.—*Balances from 31st December, 1896.*	$ c.	$ c.
1.	(*a*) Capital account	3,776 00	3,776 00
	C.—*Receipts on Account of Investments, Loans or Debts.*		
	(*a*) On Mortgages of Realty :		
10.	(i) Principal and interest		195,818 20
	F.—*Borrowed Money.*		
26.	(*b*) Borrowed by taking deposits		495,204 66
27.	*c*) Borrowed on debentures		46,413 32
	G.—*Receipts from other sources, viz.*		
30	(*a*) From bankers		455,579 69
	Totals		1,196,791 87

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I.—Expended on Corporation Account.	$ c.	$ c.
	A.—*Sums Loaned or Invested on Capital Account.*		
1.	(*a*) Loaned on Mortgages or Realty		214,266 50
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock. (*Extend into Column 1*)	17,912 00	17,912 00
	C.—Borrowed Money (other than foregoing) or Interest thereon paid, viz.		
18.	(*a*) Bank account (principal and interest). Amount deposited with bankers		472,493 69
19.	(*b*) Deposits: Principal, $ ..... Interest, $..... Amount repaid depositors		464,238 96
20.	(*c*) Debentures issued in Canada: Principal, $19,300; interest, $4,189.50		23,489 50
21.	(*d*) Debentures issued elsewhere: Interest, $563.93		563 93
	D.—*Management Expenses (other than foregoing).*		
25.	(*a*) Salaries and fees		2,050 00
26.	(*b*) Commission or brokerage		283 57
28.	(*d*) Stationery, postage, printing and advertising, inspection and repairs		993 73
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates		499 99
	Totals		1,196,791 87

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of Debentures issued by the Corporation in Canada which will mature in 1898 ...	400 00
2. Amount of Debentures issued by the Corporation el ewhere which will mature in 1898....	£100
3. Amount of other existing obligations of the Corporation which will mature in 1898.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3.82; on debentures, 4.35; on debenture stock, ...	
6. Average rate of interest per annum received by the Corporation during 1897 on mortgages of realty, 6.16; on other securities, 4.5	
7. Of the mortgages held by the Corporation, $718,820.90 is on realty situate in Ontario	
8. Loans written off or transferred to real estate account during 1897, $4,870.01, not placed in separate account	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897: No., 14; amount, $28,200	
10. Aggregate market value of the land mortgaged to the Corporation, $1,175,000.....	
11. How often are the securities held by the Corporation valued? Half yearly	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager, $10,000	
13. When were the accounts of the Corporation last audited? January 21st, 1898.....	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed): T. Leitch and A. Campbell, St. Thomas.....	

THE BARRIE LOAN AND SAVINGS COMPANY, LIMITED.

Head Office, Barrie, Ont.

Constating Instruments.

Letters Patent of Incorporation, Canada, 14th April, 1881, issued under "The Canada Joint Stock Companies' Act, 1877" (40 V. c. 43 (D)).

The lending and borrowing powers are governed by R. S. O. (1886), c. 119 (continuing 40 V. c. 43 (D)). See also L. Corp. Act (R. S O. 1897, c. 205). As to the lending powers see R S. O. c. 119, secs. 88 *et seq.* (continuing 40 V. c. 43 (D.) secs. 89, 94, 95). As to the borrowing powers see R S. O. (1886) c. 119, secs. 92 *et seq* (continuing 40 V. c. 43 (D.) secs. 91-93; see also by-law 17 of the Company.

Annual Statement

Of the condition and affairs of The Barrie Loan and Savings Company, Limited, of Barrie, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is on Dunlop st. in the Town of Barrie, in the Province of Ontario.

The Board is constituted of six directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
N, Dyment	President	Barrie, Ont		February 7, 1898.
J. McL. Stevenson	Vice-President	"		"
R. Laidlaw	Director	Toronto		"
W. Laidlaw	Director	"		"
G. Shortreed	Director	Hillsdale		"
S. Dyment	Director	Barrie		"
R. Laidlaw	Manager	Toronto		
S. Dyment	Secretary	Barrie		

A. Permanent capital stock: Total amount authorized, $250,000; total amount subscribed, $250,000, as more particularly set out in Schedule A hereto

SCHEDULE A.

(*a*) *Fixed and Permanent Capital Stock created by virtue of Building Society Acts* — None.

(*b*) *Fixed and Permanent Capital Stock created by virtue of Joint Stock Companies' Acts or Private Acts.*

Last call made: Date, 6th February, 1888; rate per cent., 15.20 per cent of capital; gross amount, $3,800 00; amount paid thereon, $3,800.00.

Description.	No. of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		$ c.	$ c.	$ c.
1. Fully called	1,175	117,500 00	117,500 00	

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS)		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: Total called $117,500.00;		
Total paid thereon	117,500 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	3,525 00	
5. (*e*) Unappropriated profits in respect of (1), (2) or (3)	3,610 35	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	10,000 00	
7. (*g*) Contiingent fund in respect of (1), (2) or (3)	349 08	
		134,984 43
LIABILITIES TO THE PUBLIC.		
27. Deposits.	34,568 55	
		34,568 55
Total actual liabilities		169,552 98

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	145,860 94	
10. (*b*) Debts secured by mortgaged land held for sale	18,200 00	
		164,060 94
E.—*Cash.*		
31. (*a*) On hand 361 81		
32. (*b*) In bank 5,130 23		
		5,492 04
Total of assets owned beneficially by Corporation		169,552 98

Cash Account.

Receipts for the year ending 31st December, 1897.

		Total.
	I.—Received by the Corporation for its own use.	$ cts.
	A.—*Balances from 31st December, 1896.*	
Item No. 2.	(i) On hand	554 95
	C.—*Receipts on account of Investments, Loans or Debts.*	
	(a) Mortgages of Realty :—	
10.	(i) Principal	18,779 62
11.	(ii) Interest	8,118 47
	F.—*Borrowed Money.*	
25.	(a) Bank or other advances, discounts or overdrafts	791 76
26.	(b) Borrowed by taking deposits	15,786 80
	Totals	44,031 60

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account.	Total.
I.—Expended on Corporation Account.	$ c.	$ c.
A.—*Sums Loaned or Invested on Capital Account.*		
Item No. 1. (a) Loaned on Mortgages of Reality		8,885 63
B.—*Expended on Stock Account.*		
8. Dividends paid on permanent stock (*Extend into Column 1.*)	7,050 00	7,050 00
C.—*Borrowed Money (other than foregoing) or interest thereon paid, viz.:*—		
18. (a) Bank Account (Principal and Interest). Interest on overdrafts		248 58
19. (b) Deposits, Principal, $21,402.50. Interest, $26.88		21,429 38
D.—*Management Expenses (other than foregoing).*		
25. (a) Salaries and Fees		519 92
28. (d) Stationery, postage, printing and advertising		18 70
29. (e) Law costs		47 53
30. (f) Fuel, rent, taxes (other than 32) and rates		239 65
E.—*Other Expenditures, viz.*		
23. (a) Furniture		8 17
34. (b) Registration of Company		32 00
F.—*Balance.*		
37. (a) Cash on hand $361.81		
(b) Cash in bank 5,130.23		5,492 04
Totals		44,031 60

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897

	$ c.
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4%..	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6½ %.....	
7. Of the mortgages held by the Corporation $164,060.94 is on realty situate in Ontario.....	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897. No., 1. Amount, $12,700.00	
10. Aggregate market value of the land mortgaged to the Corporation, $326,200.00..... ...	
11. How often are the securities held by the Corporation valued? No stated period.....	
12. (a) What officers of ths Corporation are under bond and for what sum respectively? Secretary-Treasurer, $5,000	
13. When were the accounts of the Corporation last audited? January, 1898, to end of December, 1897	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). D. F. MacWatt, Esq., Barrie, Ont.....	

THE BRITISH CANADIAN LOAN AND INVESTMENT COMPANY, LIMITED.

Head Office, Toronto, Ont.

Constating Instruments.

Incorporated on 12th April, 1876, by Special Act of Canada, 59 V. c. 57; which was amended by 40 V. (1877) c. 76 (D); and by 50-51 V. c. 110 (D).

For the lending powers. See 39 V. (1876) c. 57 (D) s. 3, as amended by 40 V. c. 76 (D).

As to the agency and guarantee powers. See 40 V. (1877) c. 76 (D) s. 2.

As to the borrowing powers. See 50-1 V. (1887) c. 110 (D), secs. 1, 6, 7.

As to the lending and the borrowing powers. See also L. Corp. Act, R. S. O. 1897, c. 205

Annual Statement

Of the condition and affairs of the British Canadian Loan and Investment Company (Limited), of Toronto, Ont, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 52 Victoria street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Name of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date.)
A. H. Campbell	President	Toronto, Ont	3rd February, 1897.	2nd February, 1898.
William Ince	Vice-President	"	"	"
John Burns	Director	"	"	"
Samuel Trees	Director	"	"	"
W. R. Brock	Director	"	"	"
J. K. Kerr	Director	"	"	"
J. H. M. Campbell	Director	"	"	"
R. H Tomlinson	Manager	"		

A. Permanent capital stock: total amount authorized, $5,000,000; total amount subscribed, $2,000,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*a*).—*Fixed and permanent capital stock created by virtue of Building Society Acts.*—

None.

(*b*).—*Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or Private Acts.*

Description.	No. of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		$ c.	$ c.	$ c.
1. Fully called	Nil.			
2. 20 per cent. called	20,000 00	2,000,000 00	398,481 60	1,601,518 40

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed).

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No.	A.—*Permanent Capital Stock or Shares.*		
2.	(*b*) Ordinary joint stock capital, 20 per cent. called: total called $398,481.60; total paid thereon...	398,481 60	
4.	(*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	11,954 45	
5.	(*e*) Unappropriated profits in respect of (1), (2) or (3).....	8,745 92	
6.	(*f*) Reserve fund in respect of (1), (2) or (3).....	120,000 00	539,181 97
	LIABILITIES TO THE PUBLIC.		
27.	Deposits, balance Provincial Loan and Savings Co's. deposits assumed .	1,804 09	
28.	Interest on deposits, due, or accrued or capitalized.....	72 86	
29.	Debentures issued in Canada and payable in Canada.....	266,866 91	
30.	Interest due and accrued on (29)	2,827 46	
31.	Debentures issued in Canada payable elsewhere	1,371,755 73	
32.	Interest due and accrued on (31).....	8,939 50	
39.	Due on loans in process of completion or to pay assumed mortgages, etc.	446 03	
40.	Other liabilities to the public, viz.:		
41.	(a) Due agents in Britain	878 65	1,653,591 23
	Total actual liabilities.....	.....	2,192,773 20

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing		137,173 95
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	1,605,325 62	
10. (*b*) Debts secured by mortgaged land held for sale	210,164 17	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	112,276 50	1,927,766 29
C.—*Debts not above Enumerated for which the Corporation Holds Securities as Follows:*		
14. (*b*) Debts secured by Municipal Bonds or Debentures	50,471 06	
15. (*c*) Debts secured by Public School Debentures	2,606 00	
20. (*h*) Debts secured only by Permanent Stock or Shares of the Corporation.	1,200 00	
22. (*j*) Debts secured by Debentures of the Corporation	1,000 00	
23. (*k*) Debts secured by Shares of Joint Stock Companies	22,250 92	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein.	193 30	77,721 28
E.—*Cash.*		
31. (*a*) On hand	2,352 82	
22. (*b*) In banks	31,099 88	33,452 70
F.—*Assets not Hereinbefore Mentioned.*		
37. (*a*) Stock in Royal Bank of Scotland		15,058 98
38. (*b*) Office furniture and fixtures		1,600 00
Total of assets owned beneficially by Corporation		2,192,773 20

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Total. (Column 4.)
	I.—Received by the Corporation for its own use.	$ c.
	A.—*Balance from 31st December, 1896.*	
2.	(i) On hand	2,068 80
3.	(ii) In bank	15,573 86
	C.—*Receipts on account of investments, loans or debts.*	
	(*a*) On mortgages of realty :—	
10.	(i) Principal	156,018 09
11.	(ii) Interest	123,339 48
	(*b*) On other securities :—	
12.	(i) Principal	156,288 67
13.	(ii) Interest or dividends is included in item 11.	
	F.—*Borrowed money.*	
27.	(*c*) Borrowed on debentures	27,843 10
	G.—*Receipts from other sources, viz.:*	
30.	(*a*) Insurance premiums repaid	3,138 94
	(*b*) Sundry disbursements repaid	484 33
	(*c*) Law costs and charges repaid	2,929 92
	Totals	487,685 19

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I.—Expended on Corporation Account.	$ c.	$ c.
	A.—*Sums loaned or invested on Capital Account.*		
1.	(*a*) Loaned on mortgages of realty		79,124 41
	(*b*) Loaned or invested in other securities, viz. :—		
2.	(i) Sundry Joint Stock Companies' shares		121,995 00
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock. (*Extend into column 1*)	25,901 31	25,901 31
	C.—*Borrowed money (other than foregoing) or interest thereon paid, viz.* :		
20.	(*c*) Debentures issued in Canada: Principal, $2,359.15; interest, $14,830.50		17,189 65
21.	(*d*) Debentures issued in Canada and payable elsewhere: Principal, $124,167.71; interest, $58,349.28		182,516 99
	D.—*Management expenses (other than foregoing)* :		
25.	(*a*) Salaries and fees, including directors and auditors compensation		8,011 00
26.	(*b*) Commission or brokerage		3,209 71
28.	(*d*) Stationery, postage, printing and advertising		722 64
29.	(*e*) Law costs and loan charges		2,930 96
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates		2,053 23
31.	(*g*) Travelling expenses		76 40
32.	(*h*) Insurances or taxes advanced on property mortgaged to corporation		8,225 84
	E.—*Other expenditures, viz.* :		
33.	(*a*) Inspection and expenses		1,111 09
34.	(*b*) Office expenses		822 05
35.	(*c*) Interest paid to banks		342 21
	F.—*Balance.*		
37.	(*a*) Cash on hand $ 2,352 82		
	(*b*) Cash in various banks 31,099 88		33,452 70
	Totals		487,685 19

Miscellaneous Statement for the Year ending 31st December, 1897.

	$ c.
1. Amount of debentures issued by the Corporation, and payable in Canada, which will mature in 1898	43,250 00
2. Amount of debentures issued by the Corporation in Canada, and payable elsewhere, which will mature in 1898	319,411 55
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	319,050 05
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4%; on debentures, 4.17%; on debenture stock, *nil.*	
6. Average rate of interest per annum received by the Corporation during 1897 on mortgages of realty, 5.78%; on other securities, 4.46%.	
7. Of the mortgages held by the Corporation $1,767,988.42 is on realty situate in Ontario, and $352,548.72 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	121,910 95
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No., 21, amount	38,826 73
10. Aggregate market value of the land mortgaged to the Corporation, $4,212,600.	
11. How often are the securities held by the Corporation valued? As often as it is deemed necessary.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Manager, $10,000; accountant, $2,000; cashier, $2,000; clerk and stenographer, $1,000; inspector, $1,000.	
13. When were the accounts of the Corporation last audited? To 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed), David Higgins, Toronto; H. W. Eddis, F.C.A., Toronto.	

THE BRITISH MORTGAGE LOAN COMPANY OF ONTARIO.

Head Office, Stratford, Ontario.

Constating Instruments.

Incorporated by Letters Patent of Ontario, dated October 5th, 1877 (Lib. 5, No. 52), issued under R. S. O. 1877, c. 150, which Act was continued by R S. O. 1887, c. 157, and was as to Loan Corporations superseded by 60 V., c. 38 (O), now R. S. O. 1897, c. 205.

The lending and the borrowing powers of the company are derived from its Letters Patent and the above public general Statutes.

Annual Statement

Of the condition and affairs of The British Mortgage Loan Company of Ontario at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at Market street, in the City of Stratford, in the Province of Ontario.

The Board is constituted of eight directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Hon. Thomas Ballantyne.	President	Stratford	Sept. 19, 1892.....	January, 1899.
Samuel S. Fuller	Vice-President...	"	Jan. 17, 1889	"
James Corcoran	Director	Toronto	Dec. 20, 1878	"
John W. Scott.....	Director	Listowel	July 16, 1877	"
Malcolm MacFarlane....	Director	Stratford	Jan. 20, 1887	"
George Innes.....	Director	Woodstock	Jan. 12, 1883	"
John Parker	Director	Stratford.....	Jan. 8, 1880	"
John McMillan.....	Director	"	June 18, 1879.....	"
Wm. Buckingham.....	Manager ..... / Secretary	"	Dec. 26, 1878	Undetermined.

A Permanent capital stock: Total amount authorized, $5,000,000; total amount subscribed, $450,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*a*) *Fixed and Permanent Capital Stock created by the virtue of Building Society Acts.*—None.

(*b*) *Fixed and Permanent Capital Stock created by virtue of Joint Stock Companies' Acts or Private Acts.*

Last call made about fifteen years ago on last issue of stock then made; rate, 10 per cent.

Description.	No of shares.	Total amount held.	Total amount paid thereon.
		$ c.	$ c.
1. Fully paid by consent of Company	1,624	162,400 00	162,400 00
2. Ten per cent on which has been paid by consent	2,876	287,600 00	154,104 68
Totals	4,500	450,000 00	316,504 68

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES OF STOCKHOLDERS OR SHAREHOLDERS.)		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital not fully called, but paid up in full by consent of Company	162,400 00	
2. (*b*) Ordinary joint stock capital, 10 per cent. called: Total called, $45,000; total paid thereon by consent of Company	154,104 68	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not paid to 31st December, 1897	9,491 66	
5. (*e*) Unappropriated profits in respect of (1), (2) or (3)	1,368 58	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	100,000 00	
		427,364 92
LIABILITIES TO THE PUBLIC.		
27. Deposits	559,084 13	
28. Interest on deposits, due, or accrued or capitalized, *i.e.*, ascertained on December 31, 1897, not paid but capitalized	14,755 81	
29. Debentures issued in Canada	60,100 00	
30. Interest due and accrued on (29) *i.e.*, accrued to 31st December, 1897, but not yet paid	831 85	
		634,771 79
Total actual liabilities		1,062,136 71

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows:		
2. (i) At Stratford, held in freehold	.....	11,000 00
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	998,769 00	
10. (*b*) Debts secured by mortgaged land held for sale	8,174 00	1,006,943 00
C.—*Debts not above Enumerated for which the Corporation holds Securities as follows.*		
22. (*j*) Debts secured by loans on the Company's stock	.....	8,286 00
E.—*Cash.*		
32. (*b*) in bank	.....	35,907 71
Total of assets owned beneficially by Corporation	.....	1,062,126 71

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
	I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.
	A.—*Balances from 31st December, 1896.*			
1.	(*a*) Capital Account as it was on 31st December, 1896	.....	404,794 25	(Not extended.)
	(*b*) Cash (not already shown under (1))			
3.	(ii) In bank....	7,747 26	.....	7,747 26
	B.—*Sums Received Wholly or Partly on Capital Stock.*			
4.	(*a*) Paid on Joint Stock Permanent Capital	.....	1,710 43	1,710 43
	C.—*Receipts on Account of Investments, Loans or Debts.*			
	(*a*) On Mortgages of Realty :—			
10.	(i) Principal and Interest	316,777 31		
11.	(ii) General interest, including interest on bank balances....	2,717 25		
	(*b*) On other Securities :—			
12.	(i) Principal and Interest (loans on Company's stock)	537 80		320,032 36
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*			
17.	(*b*) Rent from tenants of Company's premises	606 66	.....	606 66
	F.—*Borrowed Money.*			
26.	(*b*) Borrowed by taking deposits.....	608,824 81		
27.	(*c*) Borrowed on Debentures	20,431 85		629,256 66
	Totals.....	957,642 94	1,710 43	959,353 37

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I. Expended on Corporation Account.		
	A.—*Sums Loaned or Invested on Capital Account.*	$ c.	$ c.
1.	(*a*) Loaned on Mortgages of Realty	291,274 31	
	(*b*) Loaned or invested in other Securities, viz. :—		
	(i) Company's stock	3,540 00	294,814 31
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock. (*Extend into Column 1*)	20,486 57	20,486 57
	C.—*Borrowed Money (other than foregoing) or interest thereon paid, viz.:*—		
18.	(*a*) Bank Account (Principal and Interest), none.		
19.	(*b*) Deposits : Principal, $554,407.75. Interest, $17,739.71	572,141 46	
20.	(*c*) Debentures issued in Canada : Principal, $25,000. Interest, $4,342.90.	29,342 90	601,484 36
	D.—*Management Expenses (other than foregoing).*		
25.	(*a*) Salaries and Fees	4,156 80	
26.	(*b*) Commission or Brokerage	696 00	
28.	(*d*) Stationery, Postage, Printing and Advertising	325 98	
29.	(*c*) Law costs	34 04	
30.	(*f*) Fuel, Rent, Taxes (other than in 32) and rates	568 81	
31.	(*g*) Travelling Expenses	27 60	
32.	(*h*) Insurances and Taxes advanced on property mortgaged to the Corporation. (*Included in Item 1 (a).*		5,809 23
	E.—*Other Expenditures, viz.:*		
33.	(*a*) Grants to President and Vice-President	350 00	
34.	(*b*) Registration fee	155 00	
35.	(*c*) Sundries (caretaking and cleaning)	346 19	851 19
	F.—*Balance.*		
37.	(*b*) Cash in bank		35,907 71
	Totals		959,353 37

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	30,600 00
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898? None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898? None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	87,800 00
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3¼%; on debentures, 4½%; on debenture stock, none issued.	
6. Average rate of interest per annum received by the Corporation during 1897 on mortgages of realty, 5¼%; on other securities, 5¾%.	
7. Of the mortgages held by the Corporation all are on realty situate in Ontario, and none on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	1,516 58
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No., 4; amount, $14,473.	
10. Aggregate market value of the land mortgaged to the Corporation, $1,824,400.00.	
11. How often are securities held by the Corporation valued? Always yearly, sometimes oftener.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Manager, $10,000; the only other officer is the Accountant, and the Manager is held responsible for his fidelity.	
13. When were the accounts of the Corporation last audited? 17th January, 1898.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed). Wm. Davidson and Charles J. McGregor, M.A.	

THE BROCKVILLE LOAN AND SAVINGS COMPANY.

Head Office, Brockville, Ont.

Constating Instruments.

Incorporated by declaration filed 11th May, 1885 with the Clerk of the Peace for the United Counties of Leeds and Grenville. This declaration was made by virtue of the "Building Societies Act," R. S. O. 1877, c. 164, continued by R. S. O. 1887, c. 169, and superseded by 60 V. c. 38 (O.) now R. S. O. 1897, c. 205.

The lending and the borrowing powers are derived from the above public general Acts.

Annual Statement

Of the condition and affairs of the Brockville Loan and Savings Company, Limited, of Brockville, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at Court House Ave., in the Town of Brockville, in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
W. H. Cole	President	Brockville	3rd February, 1897.	2nd February, 1898
G. A. Starr	Vice-President	"	"	"
W. A. Gilmour	Director	"	"	"
D. Derbyshire	Director	"	"	"
D. W. Downey	Director	"	"	"
Edwin Abbott	Director	"	"	"
D. B. Jones	Managing Director.	"	"	"
W. W. Wood	Secretary	"	"	"

A. Permanent capital stock: total amount authorized, $500,000; total amount subscribed, $350,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*b*).—*Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or Private Acts.*

Last call made: Date, 8th February, 1897; rate per cent., 50; gross amount, $50,000.00; amount paid thereon, $25,450.00.

Description.	No. of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		$ c.	$ c.	$ c.
1. Fully called				
2. per cent. called				
3. per cent. called				
Totals	7,000	350,000 00	178,680 00	171,320 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed).

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: total called, $350,000.00; total paid thereon	178,680 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	5,359 20	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	16,000 00	
7. (*g*) Contingent fund in respect of (1), (2) or (3)	3,104 13	
		203,143 33
LIABILITIES TO THE PUBLIC.		
27. Deposits, including interest	228,652 91	
		228,652 91
Total actual liabilities		431,796 24

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	379,000 49	
10. (*b*) Debts secured by mortgaged land held for sale	22,138 64	
12. (*d*) Of the debts mentioned in items 9, 10 and 11 the sum of $2,525.00 is due by directors of officers of the Corporation. (Not extended)		401,139 13
C.—*Debts not above Enumerated for which the Corporation Holds Securities as follows.*		
20. (*h*) Debts secured only by Permanent Stock or Shares of the Corporation		1,922 69
E.—*Cash.*		
31. (*a*) On hand	372 26	
32. (*b*) In bank	28,062 16	28,434 42
F.—*Assets not Hereinbefore Mentioned.*		
37. (*a*) Office furniture and fixtures		300 00
Total of assets owned beneficially by Corporation		431,796 24

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Amount carried to capital account. Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
	I.—Received by the Corporation for its own use.	$ c.	$ c.
	A.—*Balances from 31st December, 1896.*		
1.	(*b*) Cash (not already shown under (1))		
3.	(ii) In bank		344 51
	B.—*Sums Received Wholly or Partly on Capital Stock.*		
4.	(*a*) Calls on Joint Stock Permanent Capital	25,450 00	25,450 00
	C.—*Receipts on Account of Investments, Loans or Debts.*		
	(*a*) On Mortgages of Realty :—		
10.	(i) Principal		57,455 38
11.	(ii) Interest		20,443 17
	(*b*) On other Securities :—		
12.	(i) Principal		3,777 00
13.	(ii) Interest or Dividends		376 65
	F.—*Borrowed Money.*		
26.	(*b*) Borrowed by taking deposits		178,152 74
	Totals		285,999 45

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
I. Expended on Corporation Account.	$ c.	$ c.
A.—*Sums Loaned or Invested on Capital Account.*		
Item No. 1. (*a*) Loaned on Mortgages of Realty		56,049 68
(*b*) Loaned or invested in other Securities		1,475 00
B.—*Expended on Stock Account.*		
8 Dividends paid on Permanent Stock. (*Extend into Column 1*)	9,633 93	9,633 93
C.—*Borrowed Money (other than foregoing) or interest thereon paid, viz.:*		
18. (*a*) Bank Account (Principal and Interest)		49,230 19
19. (*b*) Deposits: Principal, $.... ....; Interest, $		138,988 34
D.—*Management Expenses (other than foregoing)*		2,187 89
F.—*Balance.*		
37. (*a*) Cash on hand $ 372 26		
(*b*) Cash in bank 28,062 16		28,434 42
Totals		285,999 45

Miscellaneous Statement for the Year Ending 31st December. 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898, none.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898, none.	
3. Amount of other existing obligations of the Corporation which will mature in 1898, none.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4%.	
6. Average rate of interest per annum received by the Corporation during 1897 on mortgages of realty, 6½%; on other securities, 6%.	
7. Of the mortgages held by the Corporation $400,073.39 is on realty situate in Ontario, and $1,057.74 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	1,260 39
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No., 6; amount, $10,491.00.	
10. Aggregate market value of the land mortgaged to the Corporation, $600,000.00.	
11. How often are the securities held by the Corporation valued? Yearly.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Secretary-Treasurer, $3,000.	
13. When were the accounts of the Corporation last audited? January and July, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed), Joseph Blakeley, Esq., Toronto.	

THE BUILDING AND LOAN ASSOCIATION.

Head Office, Toronto, Ontario.

Incorporated by declaration made under the Building Societies' Act, Consol. Stat U.C, chapter 53, and filed on 14th February, 1870, with the Clerk of the Peace for the County of York. The above Act was successively continued by R. S. O. 1877, c. 164, and R S. O. 1887, c. 169, and was superseded by 60 V. c. 38, now R. S. O. 1897, c. 205.

The lending and the borrowing powers of the Company are derived from the above public general Statutes.

Annual Statement

Of the condition and affairs of the Building and Loan Association of Toronto, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 13 Toronto street, in the City of Toronto. in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date.
Larratt M. Smith, Q.C., D.C.L.	President	Toronto	1st March, 1870..	February, 1899
George R R. Cockburn M.A...	Vice-President	"	12th Dec., 1879..	"
Wm. Mortimer Clark, W.S.....	Director	"	26th Sept., 1879..	"
Joseph Jackes.....	Director	"	9th Jan , 1880..	"
C. S. Gzowski, Jr.....	Director	"	23rd Jan., 1891..	"
Robert Jenkins.....	Director	"	27th May, 1892..	"
A. J. Somerville.....	Director	"	9th Feb., 1897..	"
Walter Gillespie.....	Manager Secretary	13 Toronto st	1st Jan., 1897..	

A. Permanent capital stock : total amount authorized, $750,000 ; total amount subscribed, $750,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.		
	No. shares.	Par value.	
		$ c.	$ c.
1. Fully paid	30,000	25 00	750,000 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item. No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called : Total called, $750,000 ; total paid thereon	750,000 00	
4. (*d*) Dividends declared in respect of (1) but not yet paid	15,000 00	
5. (*e*) Unappropriated profits in respect of (1)	1,091 36	
6. (*f*) Reserve fund in respect of (1)	100,000 00	
7. (*g*) Contingent fund in respect of (1)	30,000 00	
		896,091 36
LIABILITIES TO THE PUBLIC.		
27. Deposits, including interest	130,741 58	
29. Debentures issued in Canada, including interest	135,155 41	
31. Debentures issued elsewhere than in Canada, including interest	548,441 58	
40. Other liabilities to the public, viz.:		
41. (a) Sundry unpaid accounts	378 58	
		814,717 15
Total actual liabilities		1,710,808 51

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—Immovable Property Owned Beneficially by Corporation.		
1. (*a*) Office premises situate as follows:		
2. (i) At Toronto, held in freehold	80,000 00	
5. (*b*) Freehold land (including buildings) other than foregoing	212,544 61	
6. (*c*) Leasehold land (including buildings) other than foregoing	9,450 75	301,995 36
B.—Debts Secured by Mortgages of Land.		
9. (*a*) Debts (other than item 10) secured by mortgages of land	1,135,699 87	
10. (*b*) Debts secured by mortgaged land held for sale	244,841 56	1,380,541 43
C.—Debts not above enumerated for which the Corporation Holds Securities as follows:		
20. (*k*) Debts secured only by Permanent Stock or Shares of the Corporation		7,632 00
E.—Cash.		
31. (*a*) On hand	1,080 55	
32. (*b*) In banks	18,959 84	20,040 39
F.—Assets not hereinbefore mentioned.		
37. (*a*) Rents due and accrued		599 33
Total of assets owned beneficially by Corporation		1,710,808 51

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)
		$ c.
	I.—Received by the Corporation for its own use.	
	A.—*Balances from 31st December, 1896.*	
	(b) Cash not already shown under (1):	
2.	(i) On hand	381 81
3.	(ii) In bank	14,978 94
	C.—*Receipts on account of Investments, Loans or Debts.*	
	(a) On mortgages of realty:	
10.	(i) Principal, taxes, insurance, etc.	105,091 04
11.	(ii) Interest	59,487 32
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*	
16.	(a) Sales (not included in any of foregoing items)	3,375 00
17.	(b) Rent, net, from Company's buildings	2,115 18
	F.—*Borrowed Money.*	
26.	(b) Borrowed by taking deposits	263,593 39
27.	(c) Borrowed on debentures	208,064 90
	Totals	657,087 58

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	
	$	c.
I.—Expended on Corporation Account.		
A.—Sums Loaned or Invested on Capital Account.		
Item No. 1. (*a*) Loaned on Mortgages of Realty	69,549	29
B.—Expended on Stock Account.		
8. Dividends paid on permanent stock. (*Extend into column 1*)	37,500	00
C.—Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:		
19. (*b*) Deposits: Principal, $281,704; interest, $4,614.42 credited	281,704	00
20. (*c*) Debentures redeemed in Canada: Principal, $43,600; interest, $6,067.36	49,667	36
21. (*d*) Debentures redeemed elsewhere: Principal, $166,746.58; interest, $22,823.34	189,569	92
D.—Management Expenses (other than foregoing).		
25. (*a*) Salaries and fees	3,904	00
26. (*b*) Commission or brokerage	2,318	34
28. (*d*) Stationery, postage, printing and advertising	654	51
29. (*e*) Law costs	114	63
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	2,065	14
32. (*h*) Insurance or taxes advanced on property mortgaged to the Corporation, included in (*a*).		
F.—Balance.		
37. (*a*) Cash on hand $ 1,080 55		
(*b*) Cash in various banks 18,959 84	20,040	39
Totals	657,087	58

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898..	16,200 00
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898.	40,150 00
3. Amount of other existing obligations of the Corporation which will mature in 1898. None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898: Principal.....	122,450 00
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3.207 per cent.; on debentures, 4.138 per cent.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 4.892 per cent.; on other securities, none.	
7. Of the mortgages held by the Corporation $1,232,069.68 is on realty situate in Ontario, and $148,471.75 is on realty situate elsewhere	1,380,541 43
8. Loans written off or transferred to real estate account during 1897, exclusive of doubtful interest	3,152 53
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No., 14; amount.....	39,153 37
10. Aggregate market value of the land mortgaged to the Corporation, $2,500,000 estimated.	
11. How often are the securities held by the Corporation valued? Mortgages yearly, properties as occasion requires.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager for $3,000, cashier for $2,000, inspector for $1,000, book-keeper for $1,000.	
13. When were the accounts of the Corporation last audited? First two weeks of January, '898.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed): H. W. Eddis, F.C.A., John M. Martin, F.C.A., Toronto.	

CANADA LANDED NATIONAL INVESTMENT COMPANY, (LIMITED).

Head Office, Toronto, Ont.

Constating Instruments.

This Company was in 1891 constituted by an amalgamation of (I) The Canada Landed Credit Company with (II) The National Investment Company of Canada (Limited), and by the re-incorporation of the amalgamated Company. Of the two Companies so amalgamated :—

I. The Canada Landed Credit Company had been incorporated in 1858 by Special Act of the Province of Canada, 22 V. c. 133 ; A Special Act of 1859, 22 V. c. 105, increased the capital ; the two foregoing Acts were amended by 29-30 V. (1866-7) c. 125. In 1873, an Act of Ontario, 36 V. c. 122, amended 22 V. c. 133 *supra* ; in 1874 the powers of the Company were extended by 38 V. c. 73 (O) ; in 1875-6 the capital was further increased by 39 V. c. 97 (O) ; in 1882 the Special Acts of 1858 and 1859 *supra* were amended by 45 V. c. 72 (O). In 1882 the Special Act of Canada, 45 V. c. 110, extended the Company's operations to Manitoba and the North-West Territories In 1890 the Special Act of Ontario, 53 V. c 128, authorized the Company to issue debenture stock, to become amalgamated with other Companies, etc. In 1891, Letters Patent of Canada, dated January, 1891, authorized the amalgamation of the Company with the National Investment Company of Canada. In 1891, Letters Patent of Ontario, dated 12th February, authorized the same amalgamation.

II. The National Investment Company of Canada had been incorporated by Letters Patent of Canada, dated 21st August, 1882, issued under 40 V. c. 43 (D).

For the powers of the amalgamated Company, see the Letters Patent above cited ; see also R. S. C. 1886, secs. 88-98, and sec. 101 ; see also the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Canada Landed and National Investment Company, Limited, of Toronto, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 23 Toronto Street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of ten directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
John L. Blaikie	President	Toronto	20th January, 1897..	26th January, 1898
John Hoskin, Q.C., LL.D	Vice-President....	"	" ..	"
A. R. Creelman, Q.C. ..	Director	"	" ..	"
Hon. Senator Gowan, LL.D., C.M.G.....	Director	Barrie	" ..	"
J. Kerr Osborne..	Director	Toronto	" ..	"
J. S. Playfair	Director	"	" ..	"
Newman Silverthorne...	Director	Summerville...	" ..	"
John Stuart	Director	Hamilton.....	" ..	"
Frank Turner	Director	Bracondale....	" ..	"
Hon. Jas. Young	Director	Galt	.....	.....
Andrew Rutherford	Manager	Toronto	.....	.....

A. Permanent capital stock: total amount authorized, $4,000,000; total amount subscribed, $2,008,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*a*).—*Fixed and permanent capital stock created by virtue of Building Society Acts.*

(*b*).—*Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or Private Acts.*

Last call made: Date..... Rate per cent..... Gross amount ..... Amount paid thereon .....

Description.	No. of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid calls.
		$ c.	$ c.	$ c.
1. Fully called	.....	.....	.....	.....
2. 50 per cent. called	20,080	2,008,000 00	1,004,000 00	.....
3. Per cent called.....	.....	.....	.....	.....
Totals.....	20,080	2,008,000 00	1,004,000 00	.....

LIST OF SHAREHOLDERS AS AT 31st DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—(*Permanent Capital Stock or Shares*).		
2. (*b*) Ordinary joint stock capital, 50 per cent. called: total subscribed, $2,008,000; total paid thereon	1,004,000 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid..	30,763 25	
6. (*f*) Reserve Fund in respect of (1), (2) or (3)	350,000 00	
7. (*g*) Contingent Fund in respect of (1), (2) or (3)	19,926 66	1,404,689 91
LIABILITIES TO THE PUBLIC.		
29. Debentures payable in Canada.....	219,130 68	
30. Interest due and accrued on (29).....	2,320 25	
31. Debentures payable elsewhere than in Canada	2,516,003 38	
32. Interest due and accrued on (31)	11,847 00	
40. Other liabilities to the public, viz:—		
(*a*) Balances at credit of borrowers and Sinking Fund loans....	55,279 11	
(*b*) Sundry creditors	8,920 52	2,813,500 94
Total actual liabilities.....	.....	4,218,190 85

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable property owned beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :—		
2. (i) At Toronto. held in freehold	40,000 00	
5. (*b*) Freehold land (including buildings) other than foregoing 6. (*c*) Leasehold land, (including buildings) other than foregoing	161,719 70	
		201,719 70
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	3,167,441 46	
10. (*b*) Debts secured by mortgaged land held for sale	404,589 35	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	140,507 05	
		3,712,537 86
C.—*Debts not above enumerated for which the Corporation holds securities as follows* :		
14. (*b*) Municipal Bonds or Debentures owned by the Company	162,795 43	
15. (*c*) Public School Debentures owned by the Company	15,581 84	
16. (*d*) Loan Corporations' Debentures owned by the Company	10,000 00	
22. (*j*) Ontario Government Script owned by the Company	27,211 70	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	4,598 00	
		220,186 97
E.—*Cash.*		
31. (*a*) On hand	1,195 64	
32. (*b*) In banks	77,699 05	
		78,894 69
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Advances on account of borrowers		4,851 63
Total of assets owned beneficially by Corporation		4,218,190 85

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Total. (Column 4).
	I.—Received by the Corporation for its own use.	$ c.
	A.—*Balances from 31st December, 1896.*	
	(b) Cash not already shown under (1) :—	
2.	(i) On hand	1,159 50
3.	(ii) In bank	114,541 97
	C.—*Receipts on account of investments, loans or debts.*	
	(a) On Mortgages of Realty :—	
10.	(i) Principal	362,584 42
11.	(ii) Interest	229,731 91
	(b) On other securities :—	
12.	(i) Principal	9,457 77
13.	(ii) Interest or dividends	8,900 12
	D.—*Receipts from real estate owned beneficially by Corporation.*	
17.	(b) Rents	17,823 72
	F.—*Borrowed money.*	
27.	(c) Borrowed on debentures	537,875 14
	G.—*Receipts from other sources, viz.* :	
30.	(a) Sundry borrowers	5,965 80
	(b) Sterling exchange	1,160 14
	Totals	1,289,200 49

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c.
A.—*Sums Loaned or Invested on Capital Account.*		
Item No. 1. (*a*) Loaned on Mortgages of Realty		255,704 09
7. (*d*) Incumbrances on Realty paid off		24,170 50
B.—*Expended on Stock Account.*		
8. Dividends paid on permanent stock. (*Extend into Column 1*)	60,597 50	60,597 50
C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*		
20. (*c*) Debentures issued in Canada: Principal, $70,430; interest, $9,594.97		80,024 97
21. (*d*) Debentures issued elsewhere: Principal, $635,333.60; interest, $103,950.04		739,283 64
D.—*Management Expenses (other than foregoing).*		
25. (*a*) Salaries and fees		16,524 67
26. (*b*) Commission or brokerage		9,036 28
28. (*d*) Stationery, postage, printing and advertising		653 88
30. (*f*) Fuel, rent, taxes (other than in 32) and rates		4,497 11
32. (*h*) Insurances or taxes advanced on property mortgaged to the Company		3,576 29
E.—*Other Expenditures, viz.:*		
33. (*a*) Payments on account of borrowers		2,043 15
34. (*b*) Payments on account of property owned		14,193 72
F.—*Balance.*		
37. (*a*) Cash on hand	1,195 64	
(*b*) Cash in various banks	77,699 05	78,894 69
Totals		1,289,200 49

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
1. Amount of debentures payable by the Corporation in Canada which will mature in 1898	36,083 00
2. Amount of debentures payable by the Corporation elsewhere which will mature in 1898	576,917 00
3. Amount of other existing obligations of the Corporation which will mature in 1898? None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	478,665 85
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, None; on debentures, 3.84%.	
6. Average rate of interest per annum received by the Corporation during 1897 on mortgages of realty, 6 21%; on other securities, 4%.	
7. Of the mortgages held by the Corporation $3,045,286.29 is on realty situate in Ontario, and $828,971.27 is on realty situate elsewhere.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No., 52; amount	119,839 00
10. Aggregate market value of the land mortgaged to the Corporation	9,700,000 00
11. How often are the securities held by the Corporation valued? Annually in the case of doubtful loans.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Manager, $5,000; Accountant and Casnier, $2,000 each; two Clerks, $2,000 and $500 respectively; Inspector, $2,000.	
13. When were the accounts of the Corporation last audited? Audited to 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed)? G. Tower Ferguson, Toronto; H. W. Williamson, Toronto.	

CANADA PERMANENT LOAN AND SAVINGS COMPANY.

Head Office, Toronto, Ont.

Constating Instruments.

1855. Incorporated under 9 V. c. 80 (Province of Canada) by declaration filed 1st March, 1855, with the Clerk of the Peace for the United Counties of York and Peel; corporate name, Canada Permanent Building and Savings Society.

1874. Dominion Act, 37 V. c. 100, changing above corporate name to Canada Permanent Loan and Savings Company.

1876. Ontario Act, 39 V. c. 94, confirming said change of corporate name.

1886. Act respecting the Company's borrowing powers and the issue of debenture stock, 49 V. c. 104 (D.).

1887. Act extending operations to whole Dominion, 50-1 V. c. 108 (D.). See secs. 1 and 2; and cf. 49 V. c. 104 (D.), s. 10.

See also the following public general Acts:—9 V. c. 80 (Prov. Canada), Consol. Stat. U. C. c. 53; R. S. O. 1877, c. 164; R. S. O. 1887, c. 169; R. S. O. 1897, c. 205; 37 V. (1874) c 50 (D); 40 V. (1877), c. 48 (D); 40 V. 1877 (c. 49 (D); 41 V. (1878), c. 22 (D.); 42 V. (1879), c. 49 (D.); 43 V. (1880), c. 43 (D.); 45 V. (1882), c. 24 (D.); 47 V. (1884), c. 40 (D.)

Annual Statement

Of the condition and affairs of the Canada Permanent Loan and Savings Company of Toronto at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 14 Toronto street, in the City of Toronto, in the Province of Ontario,

The board is constituted of eight directors holding office for two years.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
J. Herbert Mason	President and Managing Dir.	Toronto	February, 1897	February, 1899
W. G. Gooderham	Vice-President	"	" 1896	" 1898
Edward Hooper	Director	"	" 1896	" 1898
S. Nordheimer	Director	"	" 1897	" 1899
W. D. Matthews	Director	"	" 1896	" 1898
R. K. Burgess	Director	"	" 1897	" 1899
G. W. Monk	Director	"	" 1896	" 1898
Henry Cawthra	Director	"	" 1897	" 1899
Geo. H. Smith	Secretary	"		

A. Permanent capital stock: total amount authorized, $5,000,000; total amount subscribed, $5,000,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

Fixed and permanent capital stock.

Description.	No. of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.	Total remaining uncalled.
		$	$ c.	$ c.	$
1. Fully called and paid	40,000	50	2,000,000 00	2,000,000 00	
2. 20 per cent. called and paid	60,000	50	3,000,000 00	600,000 00	2,400,000 00
Totals	100,000		5,000,000 00	2,600,000 00	2,400,000 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER,, 1897

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

Item No.		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS.		
	A.—*Permanent Capital Stock or Shares.*		
1.	(*a*) Ordinary joint stock capital fully called: total called $2,000,000; total paid thereon	2,000,000 00	
2.	(*b*) Ordinary joint stock capital, 20 per cent. called: total called $600,000; total paid thereon	600,000 00	
4.	(*d*) Dividends declared in respect of (1), (2), but not yet paid	78,337 00	
6.	(*f*) Reserve fund in respect of (1), (2)	1,150,000 00	
7.	(*g*) Contingent fund in respect of (1), (2)	102,491 21	
			3,930,828 21
	LIABILITIES TO THE PUBLIC.		
27.	Deposits	795,609 16	
28.	Interest on deposits, due, or accrued or capitalized	141,125 25	
29.	Debentures issued in Canada	280,959 00	
30.	Interest due and accrued on (29)	3,044 48	
31.	Debentures issued elsewhere than in Canada	5,196,529 25	
32.	Interest due and accrued on (31)	32,631 00	
35.	Debenture stock issued elsewhere than in Canada	973,333 33	
36.	Interest due and accrued on (35)	19,466 60	
40.	Other liabilities to the public, viz.:		
41.	(*a*) Commission, salaries, etc	11,310 61	
			7,454,008 68
	Total actual liabilities		11,384,836 89

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :—		
2. (i) At Toronto, held in freehold	127,133 35	
3. (ii) At Winnipeg, held in freehold	67,000 00	
5. (*b*) Freehold land (including buildings) other than foregoing	121,078 70	315,212 05
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	9,836,301 86	
10. (*b*) Debts secured by mortgaged land held for sale	645,536 69	
11. (*c*) Interest due or accrued on item 9 and not included therein	123,820 00	10,605,658 55
C.—*Debts not above enumerated for which the Corporation holds Securities as follows :*		
14. (*b*) Debts secured by Municipal Bonds or Debentures	122,135 32	
15. (*c*) Debts secured by Public School Debentures	28,830 16	
20. (*h*) Debts secured only by Permanent Stock or Shares of the Corporation	11,975 24	162,940 72
E.—*Cash.*		
31. (*a*) On hand	3,992 00	
32. (*b*) In banks	297,033 57	301,025 57
Total of assets owned beneficially by Corporation		11,384,836 89

Cash Account.

Receipts for the year ending 31st December, 1897.

			Total. (Column 4.)
	I.—Received by the Corporation for its own use.		$ c.
	A.—*Balances from the 31st December, 1896.*		
Item No. 2.	(i) On hand	$ 545 86	
3.	(ii) In bank	163,263 02	163,808 88
	C.—*Receipts on account of investments, loans or debts.*		
	(a) On mortgages of realty :—		
10.	(i) Principal		2,376,274 78
11.	(ii) Interest		
	(b) On other securities :—		
12.	(i) Principal		67,039 69
13.	(ii) Interest or dividends		
	D.—*Receipts from real estate owned beneficially by Corporation.*		
17.	(b) Rents		9,403 36
	F.—*Borrowed Money.*		
26.	(b) Borrowed by taking deposits		201,455 18
27.	(c) Borrowed on debentures		172,485 99
	Totals		2,990,467 88

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.			Total. Column 4.
	I.—Expended on Corporation Account.		$ c.
	A.—*Sums Loaned or Invested on Capital Account.*		
1. (*a*)	Loaned on Mortgages of Realty		1,357,121 82
(*b*)	Loaned or invested in other Securities		72,919 20
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent Stock. (*Extend into Column 1*)		181,762 60
	C.—*Borrowed Money (other than foregoing) or Interest thereon Paid, viz.:*		
19. (*b*)	Deposits : Principal, $178,795.55 : Interest, $30,071.53		208,867 06
20. (*c*)	Debentures issued in Canada : Principal, $23,817.00 ; Interest, $12,184.99		36,001 99
21. (*d*)	Debentures issued elsewhere : Principal, $509,272.32 ; Interest, $211,556.98		720,829 30
23. (*f*)	Debenture Stock issued elsewhere : Principal, $.... ; Interest, $19,466.58		19,466 58
	D.—*Management Expenses (other than foregoing).*		
26. (*b*)	Commission or Brokerage		15,309 78
27. (*c*)	Advances to Agents, Salaries, Fuel, Rates, Taxes		76,506 13
28. (*d*)	Stationery, Postage, Printing, Advertising and so forth		
29. (*e*)	Law Costs		57 85
	F.—*Balance.*		
37. (*a*)	Cash on hand	$3,992 00	
(*b*)	Cash in various banks	297,033 57	301,025 57
	Totals		2,990,467 88

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
1. Amount of Debentures issued by the Corporation in Canada which will mature in 1898	116,840 00
2. Amount of Debentures issued by the Corporation elsewhere which will mature in 1898.	957,043 20
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3.39% ; on debentures, 3.85 % ; on debenture stock, 4%.	
6. Average rate of interest per annum received by the Corporation during 1897 on mortgages of realty..... ; on other securities.....	6 26
7. Of the mortgages held by the Corporation $7.765,211.14 is on realty situate in Ontario, and $2,840,447 41 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897. Written off, $358,989.05 ; transferred, $21,430.22	380,419 27
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No , 163 ; Amount	224,130 00
10. Aggregate market value of the land mortgaged to the Corporation.	22,500,000 00
11. How often are the securities held by the Corporation valued? Annually or oftener.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? No answer.....	
13. When were the accounts of the Corporation last audited? December, 31, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). J. E. Berkley Smith and Henry Barber. F. C. A., Toronto.	

THE CENTRAL CANADA LOAN AND SAVINGS COMPANY OF ONTARIO.

Head Office, Peterboro', Ontario.

Constating Instruments.

1884, 7th March, Letters Patent of Ontario (Lib. 16, No. 76).

1890, 53 V., c. 129 (O): fixes the capital stock at $5,000,000 divided into 50,000 shares of $100 each (sec. 1); confirms the purchase of the assets of the Peterborough Real Estate Investment Co., Limited, (secs. 2-4); sanctions the issue of debenture stock (secs. 5-12); authorizes agencies in United Kingdom (13); defines the limit of borrowing powers.

1893, 8th June, Letters Patent of Ontario amending the foregoing Letters Patent.

1897, May 6th, Letters Patent of Ontario so amending the foregoing Letters Patent as to give the Company the status of a Loan Company (and not the status of a Loaning Land Company) under the Loan Corporations Act.

As to lending powers see Letters Patent above cited.

As to the lending and the borrowing powers. See also special Act of the Dominion, 1898.

Annual Statement

Of the condition and affairs of the Central Canada Loan and Savings Company of Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the corporation is at No. 437 George street, in the Town of Peterborough, in the Province of Ontario.

The Board is constituted of twelve directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Hon. Geo. A. Cox	President	Toronto	26th January, 1898.	25th January, 1899...
Richard Hall	Vice-President	Peterboro'	"	"
F. G. Cox	"	Toronto	"	"
Sir Thomas W. Taylor	Director	Winnipeg		
Frederick C. Taylor	"	Lindsay		
Robert Jaffray	"	Toronto		
Wm. MacKenzie	"	"		
Edmund S. Vindin	"	Port Hope		
J. J. Kenny	"	Toronto		
Rev. John Potts, D.D	"	"		
J. H. Housser	"	"		
A. A. Cox	"	Peterboro'		
E. R. Wood	Manager / Secretary	Toronto		

A. Permanent capital stock: Total amount authorized, $5,000,000; total amount subscribed, $2,500,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

a.—Fixed and Permanent Capital Stock created by virtue of Building Societies Acts.—None.

b.—Fixed and Permanent Capital Stock created by virtue of Joint Stock Companies' Acts or Private Acts.

Description.	No. of shares.	Total amount held.	Total amount paid thereon.
		$ c.	$ c.
1. Fully called	9,375	937,500 00	937,500 00
2. 20 per cent. called	15,625	1,562,500 00	312,500 00
Totals	25,000	2,500,000 00	1,250,000 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS.)		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: Total called, $937,500; total paid thereon	937,500 00	
2. (*b*) Ordinary joint stock capital, 20% called: Total called, $312,500; total paid thereon	312,500 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	18,750 00	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	345,000 00	
7. (*g*) Contingent fund in respect of (1), (2) or (3)	30,241 92	
		1,643,991 92
LIABILITIES TO THE PUBLIC.		
27. Deposits	816,360 38	
28. Interest on deposits, due, or accrued or capitalized	16,096 36	
29. Debentures issued in Canada	810,018 39	
30. Interest due and accrued on (29)	17,513 46	
31. Debentures issued elsewhere than in Canada	2,061,844 66	
32. Interest due and accrued on (31)	9,348 45	
		3,731,181 70
40. Other liabilities to the public, viz.:		
41. (a) sundry accounts due by Company		2,419 42
Total actual liabilities		5,377,593 04

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing	78,621 92	
7. (*d*) Office furniture and fixtures	3,500 00	82,121 9
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	1,650,753 87	
11. (*c*) Interest and rents due or accrued on items 5 and 9 and not included therein	71,917 32	1,722,671 19
C.—*Debts not above enumerated for which the Corporation holds securities as follows:*		
14. (*b*) Debts secured by municipal bonds or debentures	58,541 33	
15. (*c*) Debts secured by public school debentures	1,480 00	
17. (*e*) Debts secured by Dominion Government stock or bonds	245,219 16	
18. (*f*) Debts secured by stock or bonds of any of the Provinces of Canada.	350,580 55	
22. (*j*) Debts secured by life insurance, fire insurance, trust, railway, loan and savings companies, banks and various other stocks and bonds	2,785,329 65	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	56,559 47	3,497,710 16
E.—*Cash.*		
31. (*a*) On hand	13,544 79	
32. (*b*) In banks	58,874 09	72,418 88
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Sundry accounts due to Company		2,670 89
Total of assets owned beneficially by Corporation		5,377,593 04

Cash Account.

Receipts for the year ending 31st December, 1897.

		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I.—Received by the Corporation for its own use.	$ c.	$ c.
	A.—*Balance from 31st December, 1896.*		
Item No.	(*b*) Cash (not already shown under (1)):—		
2.	(i) On hand		5,315 35
3.	(ii) In bank		66,226 03
	C.—*Receipts on account of investments, loans or debts.*		
	(*a*) On Mortgages of Realty:—		
10.	(i) Principal		481,417 93
11.	(ii) Interest	129,773 71	155,501 37
	(iii) Insurance and taxes advanced by Company		13,460 25
	(*b*) On other securities, viz., stocks and bonds owned by Company:—		
12.	(i) Principal		1,041,660 21
13.	(ii) Interest or dividends	138,957 16	142,816 55
	(*c*) Loans secured by stocks, bonds and debentures:		
14.	(i) Principal		1,448,176 58
15.	(ii) interest (included in item (ii)).		
	(iii) Fire insurance commissions	49 05	49 05
	D.—*Receipts from real estate owned beneficially by Corporation.*		
16.	(*a*) Sales (not included in any of foregoing items)		54,738 04
17.	(*b*) Rents	2,349 98	2,349 98
	F.—*Borrowed Money.*		
26.	(*b*) Borrowed by taking deposits		1,998.032 69
27.	(*c*) Borrowed on debentures, sterling, $381,643.96; currency, $389,002.87		770,646 83
	G.—*Receipts from other sources, viz.* :		
30.	(*a*) Accounts due Company		1,971 81
	Totals	271.129 90	6,182,362 67

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c.
A.—*Sums Loaned or Invested on Capital Account.*		
Item No. 1. (*a*) Loaned on Mortgages of Realty		168,849 32
(*b*) Loaned or invested in other securities, viz. :—		
2. (i) On stocks, bonds and debentures		1,061,198 04
3. (ii) Purchase of stocks, bonds and debentures		1,766,057 37
7. (*d*) Incumbrances on realty paid off		77,465 08
B.—*Expended on Stock Account.*		
8. Dividends paid on permanent stock. (*Extend into Column 1*)	75,000 00	75,000 00
C.—*Borrowed Money (other than foregoing) or interest thereon paid, viz.:*		
19. (*b*) Deposits: Principal, $1,943,370 60; interest, $32,192.72	32,192 72	1,975,563 32
20. (*c*) Debentures issued in Canada: $396,856.04; interest, $34,552.38.	34,552 38	431,508 42
21. (*d*) Debentures issued elsewhere: Principal, $426,683.86; interest, $83,622.04	83,622 04	510,305 90
D.—*Management Expenses (other than foregoing).*		
25. (*a*) Salaries and fees	12,537 80	
26. (*b*) Commission, expense or brokerage on money borrowed or loaned	7,085 21	
28. (*d*) Stationery, postage, printing and advertising	2,401 97	
29. (*e*) Law costs	445 38	
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	4,702 68	
31. (*g*) Travelling expenses and inspector's salaries, etc	3,002 30	
		30,175 34
32. (*h*) Fees, insurances or taxes advanced on property mortgaged to the Corporation		13,821 00
F.—*Balance.*		
37. (*a*) Cash on hand	13,544 79	
(*b*) Cash in various banks	58,874 09	
		72,418 88
Totals		6,182,362 67

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
. Amount of debentures issued by the Corporation in Canada which will mature in 1898	177,748 16
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898 £40,680	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898? Mortgages, $299,923.99; call loans, $242,487.35; stocks and bonds, $1,715,423.34	2,257,834 68
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4%; on debentures, sterling 4%, currency, 4.34%; on debenture stock.	
6. Average rate of interest per annum received by the Corporation during 1897 on mortgages of realty, 6%; on other securities, fluctuates.	
7. Of the mortgages held by the Corporation $1,384,433.85 is on realty situate in Ontario, and $266,320.02 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	27,756 46
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No., 12; amount	41,592 00
10. Aggregate market value of the land mortgaged to the Corporation, $3,237,613.50.	
11. How often are the securities held by the Corporation valued? Doubtful loans are watched very closely.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Manager, $3,000; Accountant, $2,000; Teller, $2,500; Inspector, $1,000; Clerks, $1,500; Winnipeg, Manager, $2,500; Accountant, $2,500.	
13. When were the accounts of the Corporation last audited? To 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed)? H. M. Pellatt, Toronto, Ont.; Wm. Mason, Peterborough, Ont.; F. H. Mathewson, Winnipeg, Man.	

THE CHATHAM LOAN AND SAVINGS COMPANY.

Head Office, Chatham, Ontario.

Incorporated under the Building Societies' Act, R.S.O. 1877, c. 164, by declaration filed with the Clerk of the Peace for the County of Kent, 27th September, 1881.

The lending and the borrowing powers are governed by the Loan Corporations Act, R.S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Chatham Loan and Savings Company of Chatham, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is on King street, in the City of Chatham, in the Province of Ontario.

The Board is constituted of seven directors, holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Archibald Bell	President	Chatham	10th February, 1897	9th February, 1898.
Nathan H. Stevens	Vice-President	"	"	"
James Gardiner	Director	"	"	"
Thomas Stone	"	"	"	"
T. K. Holmes	"	"	"	"
Hugh Malcolmson	"	"	"	"
Robert Ferguson	"	Thamesville	10th March, 1897	"
S. F. Gardiner	Manager and Sec.	Chatham		

A. Permanent capital stock: total amount authorized, $1,000,000; total amount subscribed, $352,100, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*a*)—*Fixed and permanent capital stock created by virtue of Building Society Acts.*—

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the corporation.
	No. of shares.	Par value of shares.	——		
		$	$ c.	$ c.	$ c.
1. Fully paid	3,521	100	352,100.00	237,392.59	114,707.41

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

——	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
A.—*Permanent Capital Stock or Shares.*		
Item No.		
1. (*a*) Ordinary permanent capital; total paid thereon.....	237,392 59	
6. (*f*) Reserve Fund in respect of (1), (2) or (3)..... ..	19,600 00	
		256,992 59
LIABILITIES TO THE PUBLIC.		
27. Deposits.....	291,371 65	
28. Interest on deposits, due, or accrued or capitalized.....	10,168 88	
29. Debentures issued in Canada	15,561 34	
30. Interest due and accrued on (29).....	708 12	
		317,809 99
Total actual liabilities	.....	574,802 58

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable property owned beneficially by Corporation.*		
1. (*a*) Office premises situate as follows:—		
2. (i) At the City of Chatham, held in freehold	10,600 00	10,600 00
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	497,294 30	
10. (*b*) Debts secured by mortgaged land held for sale	31,673 15	528,967 45
E.—*Cash.*		
31. (*a*) On hand	4,283 49	
32. (*b*) In bank	30,553 96	34,837 45
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture and fixtures	397 68	397 68
Total of assets owned beneficially by Corporation		574,802 58

Cash Account.

Receipts for the year ending 31st, 1897.

Item No.		Permanent Capital, including Reserve. (Column 3.)	Total. (Column 4.)
	I.—Received by the Corporation for its own use.		
	A.—*Balances from 31st December, 1897.*	$ c.	$ c.
	(*b*) Cash (not already shown under (1))		
2.	(i) On hand		2,198 77
3.	(ii) In bank		2,434 28
	B.—*Sums received wholly or partly on Capital Stock.*		
4.	(*a*) Calls on Joint Stock Permanent Capital	11,641 38	11,641 38
5.	(*b*) Premiums on (4)		12 00
	C.—*Receipts on Account of Investments, Loans or Debts.*		
	(*a*) On Mortgages of Realty :		
10.	(i) Principal		56,940 35
11.	(ii) Interest		26,629 69
	(iii) Extra interest		1,057 56
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*		
17.	(*b*) Rents		335 00
	F.—*Borrowed Money.*		
26.	(*b*) Borrowed by taking deposits		493,663 28
27.	(*c*) Borrowed on Debentures		4,788 39
	G.—*Receipts from other sources, viz.:*		
30.	(*a*) Interest on bank account and exchange		1,237 10
	Totals		600,937 80

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
		$ c.	$ c.
	I.—Expended on Corporation Account.		
	A.—*Sums Loaned or Invested on Capital Account.*		
1.	(*a*) Loaned on Mortgages of Realty		106,716 23
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock. (*Extend into column 1*)	13,816 01	13,816 01
	C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*		
19.	(*b*) Deposits: Principal, $425,805.28; interest, $10,168.88		435,974 16
20.	(*c*) Debentures issued in Canada: Principal, $4,000; interest, $660		4,660 00
	D.—*Management Expenses (other than foregoing).*		
25.	(*a*) Salaries and fees		3,080 58
26.	(*b*) Commission or brokerage		177 00
28.	(*d*) Stationery, postage, printing and advertising		351 01
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates		604 03
32.	(*h*) Insurances or taxes advanced on property mortgaged to the Corporation		721 33
	F.—*Balance.*		
37.	(*a*) Cash on hand	4,283 49	
	(*b*) Cash in bank	30,553 96	
			34,837 45
	Totals		600,937 80

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	3,975 00
2 Amount of debentures issued by the Corporation elsewhere which will mature in 1898, *nil.*	
3. Amount of other existing obligations of the Corporation which will mature in 1898, *nil.*	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	36,071 67
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3.80% : on debentures, 4½% ; on debenture stock, *nil.*	
6. Average rate of interest per annum received by the Corporation during 1897 on mortgages of realty, 6.199% ; on other securities, *nil.*	
7. Of the mortgages held by the Corporation $497,294.30 is on realty situate in Ontario ; and *nil* is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897, *nil.*	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897—number, 4 ; amount, $5,060.52.	
10. Aggregate market value of the land mortgaged to the Corporation, $1,129,700.	
11. How often are the securities held by the Corporation valued ? Whenever mortgage is taken.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively ? Manager, $8,000 ; teller, $1,000 ; clerk, $1,000.	
13. When were the accounts of the Corporation last audited ? Completed January 20th, 1898.	
14. Names and address of the auditors respectively for 1897—J. R. Gemmill, Sheriff, and Geo. D. Ross, Chatham, Ont.	

THE CITY AND COUNTY LOAN ASSOCIATION.

Head Office, Toronto, Ont.

Incorporated under Building Societies Act, R. S. O. 1887, c. 169, by declaration filed with the Clerk of the Peace for the County of York, 26th January, 1889.

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the City and County Loan Association, of Toronto, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 32 Queen street east, in the City of Toronto, in the Province of Ontario.

The Board is constituted of six directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Ambrose Kent, J.P.....	President	Toronto	9th February, 1897.	8th February, 1898.
George W. Jackes, M.D ..	Vice-President .	Eglington	"	"
James Watt.....	Director..... .	Toronto	"	"
George Boxall.....	Director.....	"	"	"
James Ramsay	Director.....	Eglington	"	"
Wm. L. Wilkinson.....	Director.....	Toronto	"	"
W. J. Wharin.....	Manager ..... Secretar	"		

A. Permanent capital stock: total amount authorized, $500,000; total amount subscribed, $40,050.00, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st Dec., 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	—		
		$ c.	$ c.	$ c.	$ c.
1. Fully paid	622	50 00	31,100 00	31,100 00	
3. Instalment (payable by fixed periodical payments, and still in process of payment)	179	50 00	8,950 00	3,866 65	5,093 35
Totals	801		40,050 00	34,966 65	5,093 35

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed).

BALANCE SHEET AS AT 31ST DECEMBER, 1897

Capital and Liabilities.

DR.

—	$ c.	
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.– *Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: total called, $.....; total paid thereon	31,100 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid.	50 00	
7. (*g*) Contingent fund in respect of (1), (2) or (3)	1,784 11	
8. (*h*) Instalment permanent stock (pavable by fixed periodical payments): Total subscribed $8,950.00, on which has been paid..	3,866 65	
		36,800
LIABILITIES TO THE PUBLIC.		
37. Owing to banks (including interest due or accrued)	1,432 23	
40. Other liabilities to the public, viz.:		
41. (a) Mortgage on office building	6,500 00	
42. (b) Sundry accounts payable	324 00	
		8,256 23
Total actual liabilities		45,056 99

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :		
(i) At 32 Queen Street, East Toronto, held in freehold.....	16,618 80	16,618 80
B.—*Debts Secured by Mortgages on Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land.....	18,619 72	
10. (*b*) Debts secured by mortgaged land held for sale	6,170 45	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein..	206 68	24,996 85
C.—*Debts not above Enumerated for which the Corporation Holds Securities as follows,*		
20. (*h*) Debts secured only by permanent stock or shares of the Corporation.	2,795 94	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein ..	264 85	3,060 79
D.—*Unsecured debts.*		
27. (*a*) Sundry accounts owing	170 07	
30. (*d*) Interest due or accrued on items 27 to 29 and not included therein ..	4 95	175 02
E.—*Cash.*		
31. (*a*) On hand	79 01	79 01
F.—*Assets not hereinbefore mentioned.*		
57. (*a*) Office furniture	.....	126 52
Total of assets owned beneficially by Corporation.....	.....	45,056 99

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.	Amount carried to capital account. — Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
I. Received by the Corporation for its own use.	$ c.	$ c.	$ c.
A.—*Balances from 31st December, 1896.*			
Item No. 1. (*b*) Cash not already shown under (1).			
2. (i) On hand	13 10		13 10
B.—*Sums received wholly or partly on Capital Stock.*			
9. (*f*) Premiums on (6), (7) and (8)		964 38	964 38
C.—*Receipts on account of investments, loans or debts.*			
(*a*) On Mortgages of Realty :			
10. (i) Principal	3,350 49		
11. (ii) Interest	1,105 24		
(*b*) On other securities :			
13. (ii) Interest or dividends	49 00		
(*c*) Unsecured debts :			
14. (i) Principal	92 00		
			4,596 73
D.—*Receipts from real estate owned beneficially by Corporation.*			
17. (*b*) Rents of office buildings	874 00		874 00
E.—*Miscellaneous.*			
22 (*c*) Forfeitures or lapses. (*Extend into Column 1*)	1,914 48		1,914 48
G.—*Receipts from other sources, viz.*			
30. (*a*) Rents of properties held under power of sale	544 00		
(*b*) Premiums on cancelled stock	100 00		644 00
Totals	8,042 31	964 38	9,006 69

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
1.—Expended on Corporation Account.		
A.—Sums Loaned or Invested on Capital Account.		
Item No.		
1. (*a*) Loaned on Mortgages of Realty	1,641 78	
7. (*d*) Incumbrances on realty paid off	500 00	2,141 78
B.—Expended on Stock Account.		
8. Dividends paid on permanent stock. (*Extend into column 1*)	29 05	
15. Stock forfeited or lapsed	1,914 48	1,943 53
C.—Borrowed Money (other than foregoing) or Interest Thereon paid, viz.:		
18. (*a*) Bank account (principal and interest) $2,116.49+$111.41	2,227 90	2,227 90
D.—Management Expenses (other than foregoing):		
25. (*a*) Salaries and fees	518 00	
28. (*d*) Stationery, postage, printing and advertising	137 82	
29. (*e*) Law costs	170 00	
30. (*f*) Rent	240 00	1,065 82
E.—Other Expenditures, viz.:		
33. (*a*) Interest on Mortgage on office building	339 28	
34. (*b*) Taxes, repairs and maintenance on office building	478 64	
35. (*c*) Taxes, repairs, etc., on properties held under power of sale	457 34	
36. (*d*) Sundry accounts paid	273 39	1,548 65
F.—Balance.		
37. (*a*) Cash on hand	79 01	79 01
Totals	9,006 69	9,006 69

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898, none.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898, none.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. Mortgage on office building...	6,500 00
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	2,327 45
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, none ; on debentures, none ; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, about 6½% ; on other securities, about 7%.	
7. Of the mortgages held by the Corporation $24,790.17 is on realty situate in Ontario, and $ is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897, none.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897. No, 7 ; amount, 6,431.72.	
11. How often are the securities held by the Corporation valued ? At intervals required by resolution of the board, last valued in March, 1897.	
12. What officers of the Corporation are under bond and for what sum respectively ? Manager, $1,500.	
13. When were the accounts of the Corporation last audited ? January, 1898.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed), Isaac Curry, 262 Church St., Toronto ; Samuel J. Douglas, Eglington.	

THE CRÉDIT FONCIER FRANCO-CANADIEN.

Head Office, 30 St. James Street, Montreal.

As to the Paris Board of Management ("Paris Committee"), see 43-4 V. c. 60 (Q.), secs. 30-35. 47 V. c. 62 (Q.), Sched. A, Art 51, enacts as follows: "The general meetings shall be held before the 31st of May in each year, either at the head office or at Paris, in France, according as there may be more shares to order held and stock certificates to bearer deposited in the Province of Quebec or in France, thirty days before the meeting."

Chief agent for Ontario: William Edwin Long, Toronto.

Constating Instruments.

43-4 V. c. 60, Province of Quebec: An Act to incorporate the Company, Schedule A to the Act contains the original constitution and laws of the Company: See Act of Quebec (1884), 47 V. c. 62, *infra*.

44 V. c. 58, Dominion of Canada. Section 13 defines the Company's borrowing powers.

44 V. c. 51, Province of Ontario, empowers the Company to establish branch offices in Ontario to lend money, hold real estate in the Province, etc.

45 V. c. 84, Province of Quebec, amends 43-4 V. c. 60 (Q.).

46 V. c. 85, Dominion of Canada, assimilates the powers of the Company to those of other loan companies.

47 V. c. 62, Province of Quebec. Schedule A to the Act contains the revised constitution and laws of the Company.

55-6 V. c. 29 (D., Criminal Code, 1892), by sec. 205 (6 d) exempts the Company from the general law prohibiting lotteries.

Annual Statement

Of the condition and affairs of the Crédit Foncier Franco-Canadien (Loan Company) of Montreal, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 30 St. James street, in the City of Montreal, in the Province of Quebec.

The chief agency for Ontario is situated at No. 28 Wellington street east, in the City of Toronto, in the Province of Ontario.

The chief agent and attorney for Ontario is Wm. Edwin Long, and his address is Toronto, in the Province of Ontario.

The Board is constituted of ten directors holding office for three years.

The directors and chief executive officers of the Corporation at the 31st December 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Geo. Brolemann	President	Paris	May, 1895	May, 1898.
Sir J. A. Chapleau	Vice-President	Montreal	" 1897	" 1900.
E. J. Barbeau	Director	"	" 1897	" 1900.
René Brice	Director	Paris	" 1895	" 1898.
I. de Camondo	Director	"	" 1895	" 1898.
A. Denfert Rochereau	Director	"	" 1896	" 1899.
G. de Molinari	Director	"	" 1896	" 1899.
Mr. Justice J. A. Ouimet	Director	Montreal	" 1897	" 1900.
J. H. Thors	Director	Paris	" 1897	" 1900.
Mr. Justice J. S. C. Würtele	Director	Montreal	" 1896	" 1899.
M. Chevalier	Manager	"	January, 1890	
T. R. Nelson	Secretary	"	April, 1890	

A. Permanent capital stock : Total amount authorized, $4,784,689 ; total amount subscribed, $4,784,689, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*b*).—*Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or Private Acts.*

Description.	No. of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
			$ c.	$ c.	$ c.
2. 25 per cent. called	50,000		4,784,689 00	1,196,172 25	3,588,516 75

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
2. (*b*) Ordinary joint stock capital, 25% called ; total called, $1,196,172.25 ; total paid thereon	1,196,172 25	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	1,140 07	
5. (*e*) Unappropriated profits in respect of (1), (2) or (3)	92,930 35	
6. (*f*) Reserve fund in respect of (1,) (2) or (3)	67,406 99	
7. (*g*) Contingent fund in respect of (1), (2) or (3)	259,922 23	
		1,617,571 89
LIABILITIES TO THE PUBLIC.		
29. Debentures issued in Canada	74,315 14	
30. Interest due and accrued on (29)	1,929 82	
31. Debentures issued elsewhere than in Canada	6,358,962 82	
32. Interest due and accrued on (31)	68,967 09	
39. Due on loans in process of completion or to pay assumed mortgages	85,514 06	
40. Other liabilities to the public, viz.:		
41. (a) Sundries	1,642 97	
		6,591,331 90
Total actual liabilities		8,208,903 79

Balance Sheet as at 31st December, 1897.

Cb.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :—		
2. (i) At Montreal, held in freehold	36,257 82	
3. (ii) At Quebec, held in	14,292 05	
5. (*b*) Freehold land (including buildings) other than foregoing	212,217 10	
		262,766 97
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	7,427,538 19	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	85,213 52	
		7,512,751 71
E.—*Cash.*		
31. (*a*) On hand	200 00	
32. (*b*) In bank	370,807 76	
		371,007 76
F.—*Assets not Hereinbefore Mentioned.*		
37. (*a*) Interest accrued but not yet due	37,521 10	
38. (*b*) Disbursed account borrowers	15,340 80	
39. (*c*) Sundries	9,515 45	
		62,377 35
Total of assets owned beneficially by Corporation		8,208,903 79

Cash Account.

Receipts for the year ending 31st December, 1897.

	Total. (Column 4.)
	$ c.
I.—Received by the Corporation for its own use.	
C.—*Receipts on Account of Investments, Loans or Debts.*	
Item No. (*a*) On Mortgages of Realty :—	
11. (ii) Interest	380,839 79
(*b*) On other securities :—	
13. (ii) Interest accrued but not yet due	37,521 10
(*c*) Unsecured debts :—	
15. (ii) Interest on deposits in banks	14,338 49
D.—*Receipts from Real Estate Owned Beneficially by Corporation.*	
17. (*b*) Rents	2,112 88
E.—*Miscellaneous.*	
19. (*b*) Bonus on loans paid off	3,442 32
21. (*d*) Sundries	4 39
Totals	438,258 97

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.
C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*	
Item No. 20. (*c*) Interest and sinking fund on debentures	283,225 66
D.—*Management Expenses (other than foregoing).*	
25. (*a*) Salaries and fees	38,513 47
26. (*b*) Commission or brokerage	990 30
27. (*c*) Income tax	10,547 66
29. (*e*) Loss on sales	12,465 28
F.—*Balance.*	
37. (*a*) Profit and loss	92,516 60
Totals	438,258 97

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898	
3. Amount of other existing obligations of the Corporation which will mature in 1898	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898? Not possible to answer.	
5. Average rate of interest per annum paid by the Corporation during 1887. On deposits, none; on debentures, about 4⅓%; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897. On Mortgages of Realty about 5%; on other securities, none.	
7. Of the mortgages held by the Corporation $903,562.57 is on realty situate in Ontario, and $6,523,975.62 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897, $68,322.85.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No record of proceedings kept.	
10. Aggregate market value of the land mortgaged to the Corporation, $14,855,000.00.	
11. How often are the securities held by the Corporation valued? At no regular periods, but as occasion arises.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager to the extent of 100 shares of the Company's stock and the Directors to the extent of 50 shares each.	
13. When were the accounts of the Corporation last audited? March, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed)? Hon. A. Desjardins, Montreal; Monsieur André Bisset, Montreal.	

CROWN SAVINGS AND LOAN COMPANY.

Head Office, Petrolia, Ontario.

Incorporated under the Building Societies Act, R. S. O. 1877, c. 164, by declaration filed with the Clerk of the Peace for the County of Lambton 30th January, 1882.

The lending and the borrowing powers of the Company are now governed by the Loan Corporations Act, R. S. O. 1897, c. 205, ; cf. R. S. O. 1877, c. 164, and R. S. O. 1887, c. 169.

Annual Statement

Of the condition and affairs of the Crown Savings and Loan Company of Petrolia at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at the Town of Petrolia, in the Province of Ontario.

The Board is constituted of twelve directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
J. H. Fairbank	President	Petrolia	3rd February, 1897.	4th February, 1898.
J. L. Englehart	Vice-President	"	"	"
Frank Smith	Director	Sarnia	"	"
A. Westland	Director	Wyoming	"	
Frank Ward	Director	"	"	"
Allan Duncan	Director	"	"	"
John Kerr	Director	Petrolia	"	"
F. G. Templeton	Director	"	"	
N. Ramsberry	Director	Osborne	"	"
Wm. Neil	Director	Bunyan	"	"
Hugh Park	Director	Glen Rea	"	"
Thos. Steadman	Director	Wyoming	"	"
Wm. English	Manager	Petrolia	"	"

A. Permanent capital stock: total amount authorized, $1,000,000; total amount subscribed, $200,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value.	——		
		$	$ c.	$ c.	$ c.
1. Fully paid	3,316	50	165,800 00	165,800 00	.....
2. Prepaid	684	50	34,200 00	12,724 55	21,475 45
Totals	4,000	.....	200,000 00	178,524 55	21,475 45

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

Item No.	——	$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	A.—*Permanent Capital Stock or Shares.*		
1.	*(a)* Ordinary joint stock capital fully called: total called $200,000; total paid thereon	178,524 55	
6.	*(f)* Reserve fund in respect of (1), (2) or (3)	25,000 00	203,524 55
	C.—*Liabilities to Stockholders or Shareholders other than as already shown under A or B, viz.*		
24.	Profit and loss balance	.....	311 38
			203,835 93
	LIABILITIES TO THE PUBLIC.		
27.	Deposits	92,691 74	
29.	Debentures issued in Canada	5,835 50	98,527 24
	Total actual liabilities	.....	302,363 17

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	254,058 13	
10. (*b*) Debts secured by mortgaged land held for sale	2,502 65	256,560 78
C. *Debts not above enumerated for which the Corporation holds Securities as follows:*		
14. (*b*) Debts secured by municipal bonds or debentures	.....	38,347 50
E.—*Cash.*		
32. (*b*) In bank	.....	7,440 89
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture.....	.....	14 00
Total of assets owned beneficially by Corporation..... ..	.....	302,363 17

Cash Account.

Receipts for the year ending 31st December, 1897.

	Permanent capital, including reserve. (Column 3.)	Total. Column 4.
I.—Received by the Corporation for its own use.	$ c.	$ c.
B.—*Sums received wholly or partly on Capital Stock.*		
Item No. 4. (*a*) Calls on joint stock permanent capital	4,820 07	4,820 07
C.—*Receipts on account of Investments, Loans or Debts.*		
(*a*) On Mortgages of Realty:		
10. (i) Principal	26,238 06	
11. (ii) Interest	14,059 46	
(*b*) On other securities, municipal debentures:		
12. (i) Principal	9,330 17	
13. (ii) Interest on dividends		49,627 69
F.—*Borrowed Money.*		
26. (*b*) Borrowed by taking deposits		56,599 77
G.—*Receipts from other sources, viz.:*		
30. (*a*) General interest		118 81
Totals		111,166 34

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance, or contingent account. (Column 1).	Amount carried to capital account. Permanent capital including reserve. (Column 3).	Total. (Column 4).
I.—Expended on Corporation Account.	$ c.	$ c.	$ c.
Item No. A.—*Sums loaned or invested on Capital Account.*			
1. (*a*) Loaned on Mortgages of Realty		36,187 40	
(*b*) Loaned or invested in other securities, viz.:			
2. (1) Municipal debentures		12,026 21	48,213 61
B.—*Expended on Stock Account.*			
8. Dividends paid on permanent stock. (*Extend into column 1*)	8,731 24		8,731 24
C.—*Borrowed money (other than foregoing) or interest thereon paid, viz.:*			
18. (*a*) Bank account (principal and interest)		3,950 46	3,950 46
19. (*b*) Deposits; Principal, $37,814.27; interest, $2,551.17	2,551 17	37,814 27	40,365 44
20. (*c*) Debentures issued in Canada: Principal, $110.00; interest, $271.00	271 00	110 00	381 00
D.—*Management expenses (other than foregoing):*			
25. (*a*) Salaries and fees	1,000 00		
26. (*b*) Commission or brokerage	86 45		
28. (*d*) Stationery, postage, printing and advertising			
29. (*e*) Law costs	456 75		
30. (*f*) Fuel, rent, taxes (other than in 32) and rates			1,543 20
E.—*Other expenditures, viz.:*			
33. (*a*) General interest	50		
34. (*b*) Premium on debentures	540 00		540 50
F.—*Balance.*			
(*b*) Cash in bank			7,440 89
Totals			111,166 34

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898, none.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898, none.	
3. Amount of other existing obligations of the Corporation which will mature in 1898, none.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3½%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5¾%; on other securities, 5%.	
7. Of the mortgages held by the Corporation all are on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897, none.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, none.	
10. Aggregate market value of land mortgaged to the Corporation, estimated	500,000 00
11. How often are the securities held by the Corporation valued? Once each year.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? none.	
13. When were the accounts of the Corporation last audited? To 31st December, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed), J. M. Fowler and James McMillan.	

THE DOMINION SAVINGS AND INVESTMENT SOCIETY.

Head Office, London, Ontario.

Incorporated under chapter 53 of the Consolidated Statutes of Upper Canada as a Permanent Building Society, by declaration filed with the Clerk of the Peace for the County of Middlesex, 20th April, 1872.

The lending and the borrowing powers are governed by the Loan Corporations Act, R.S.O. 1897, c. 205; cf. Consol. Stat. U. C. c. 53; R.S.O. 1877, c. 164; and R.S.O. 1887, c 169.

Annual Statement

Of the condition and affairs of the Dominion Savings and Investment Society of London, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario pursuant to the laws of the said Province.

The head office of the Corporation is at No. 371 Richmond Street in the City of London, in the Province of Ontario.

The Board is constituted of nine directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Robert Reid	President	London, Ont	9 Feb., 1897	9 Feb., 1898
Charles N. Elliott	Vice-President	" "	"	"
Thomas N. Purddom	Inspecting Director	" "	"	"
W. J. McMurtry	Director	Toronto "	"	"
Rev. J. Herbert Starr	Director	" "	"	"
Wm. Bettridge, M.B	Director	Strathroy "	"	"
John Ferguson	Director	London "	"	"
Lt.-Col. R. Lewis	Director	" "	"	"
John Morrison	Director	Toronto "	"	"
Nathaniel Mills	Manager	London "	"	"

A.—Permanent capital stock: Total amount authorized, $1,500,000; total amount subscribed, $1,000,000.

List of Shareholders as at 31st December, 1897.

(Not printed.)

Balance Sheet as at 31st December, 1897.

Capital and Liabilities.

Dr.

		$ c.	$ c.
	Capital (Liabilities to Stockholders or Shareholders.)		
Item No.	A.—*Permanent Capital Stock or Shares.*		
1.	(*a*) Ordinary joint stock capital fully called: Total called $934,200, total paid thereon	934,200 00	
2.	(*b*) Ordinary joint stock capital per cent. called; Total called $291.38, total paid thereon	291 38	
5.	(*e*) Unappropriated profits in respect of (1), (2) or (3)	10,000 00	
7.	(*g*) Contingent fund in respect of (1), (2) or (3)	17,248 81	
			961,740 19
	Liabilities to the Public.		
27.	Deposits	752,992 09	
28.	Interest on deposits, due or accrued or capitalized (included in No. 27)		
29.	Debentures issued in Canada	172,100 00	
30.	Interest due and accrued on (29)	1,723 64	
31.	Debentures issued in Canada and payable elsewhere	357,029 40	
32.	Interest due and accrued on (31)	1,849 65	1,285,694 78
	Total actual liabilities		2,247,434 97

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (Other than item 10) secured by mortgages of land	1,948,915 41	
10. (*b*) Debts secured by mortgaged land held for sale	178,190 62	
12. (*d*) Of the debts mentioned in items 9, 10 and 11, the sum of $2,363 17 is due by directors or officers of the Corporation. (Not extended, $2,363.17.)		
		2,127,106 03
C.—*Debts not above enumerated for which the Corporation Holds Securities as follows:*		
20. (*h*) Debts secured only by Permanent Stock or Shares of the Corporation		88,355 96
E.—*Cash.*		
31. (*a*) On hand	1,847 97	
32. (*b*) In banks	29,125 01	
		30,972 98
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Office fittings	1,000 00	1,000 00
Total of assets owned beneficially by Corporation		2,247,434 97

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.				Total. (Column 4.)
				$ c.
	I.—Received by the Corporation for its own use.			
	A.—*Balances from 31st December, 1896.*			
	(a) Cash (not already shown under (1)):			
2.	(i) On hand			1,229 52
3.	(ii) In bank			22,170 81
	C.—*Receipts on Account of Investments, Loans or Debts.*			
	(a) On Mortgages of Realty:			
10.	(i) Principal	about	$347,625 29	
11.	(ii) Interest	"	84,450 00	432,075 29
	(b) On other securities:			
12.	(i) Principal	about	$2,237 80	7,337 80
13.	(ii) Interest or dividends	"	5,100 00	stock loans
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*			
16.	(a) Sales (not included in any of foregoing items)			Included in Nos. 10 and 11.
17.	(b) Rent			
	F.—*Borrowed Money.*			
26.	(b) Borrowed by taking deposits			903,656 66
27.	(c) Borrowed on debentures			77,429 60
	Totals			1,443,899 68

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column
I.—Expended on Corporation Account.		
A.– *Sums Loaned or Invested on Capital Account.*	$ c.	$ c.
Item No. 1. (*a*) Loaned on Mortgages of Realty		322,019 43
B.—*Expended on Stock Account.*		
8. Dividends paid on permanent Stock. (*Extend into Column 1*)	70,065 00	70,065 00
C.—*Borrowed Money (other than foregoing) or interest thereon paid, viz:*		
19. (*b*) Deposits: Principal, $773,956.63; Interest, $27,655.89		801,612 52
20. (*c*) Debentures issued in Canada: Principal, $71,300.00; Interest, $9,410.98		80,710 98
21. (*d*) Debentures issued elsewhere: Principal, 109,451.29; Interest, $16,839.12		126,290 41
D. –*Management Expenses (other than foregoing.)*		
25. (*a*) Salaries and Fees		5,659 53
26. (*b*) Commission or Brokerage		1,510 66
28. (*d*) Stationery, Postage, Printing and Advertising		889 25
30. (*f*) Fuel, Rent, Taxes (other than in 32), Rates and Registration Fee		2,054 46
31. (*g*) Travelling Expenses and Inspector's salary		1,111 90
32. (*h*) Insurances or taxes advanced on property mortgaged to the corporation charged to borrowers, included in No. 1.		
E.—*Other Expenditures, viz.:*		
33. (*a*) Telegrams and telephone		132 91
34. (*b*) New office furniture and sundries		869 65
F.—*Balance.*		
37. (*a*) Cash on hand	1,847 97	
(*b*) Cash in various banks	29,125 01	30,972 98
Totals		1,443,899 68

Miscellaneous Statement for the Year Ending 31st December, 1897.

		$ c.
1.	Amount of Debentures issued by the Corporation in Canada which will mature in 1898	138,900 00
2.	Amount of Debentures issued by the Corporation elsewhere which will mature in 1898	91,984 13
3.	Amount of other existing obligations of the Corporation which will mature in 1898, exclusive of deposits, none.	
4.	Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898, including demand loans	704,441 67
5.	Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3 91% ; on debentures, 4.11%.	
6.	Average rate of interest per annum received by the Corporation during 1897 on mortgages of realty, 5.68% ; on other securities, 6%.	
7.	Of the mortgages held by the Corporation, $2,127,105.03 is on realty situate in Ontario, and $ is on realty situate elsewhere.	
8.	Loans written off or transferred to real estate account during 1897, abortive sales, acquired by deed, etc.....	9,030 37
9.	Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897 ? No., 24 ; amount.....	25,070 04
10.	Aggregate market value of the land mortgaged to the Corporation	3,354,700 00
11.	How often are the securities held by the Corporation valued ? Annually.	
12.	(*a*) What officers of the Corporation are under bond and for what sum respectively : Manager, $10,000 ; Accountant, $5,000 ; Teller, $5,000.	
13.	When were the accounts of the Corporation last audited ? To 31st December, 1897..	
14.	Names and address of the auditors respectively for 1897 and 1898 (if appointed) J. K. McDermid, London, Ont. ; John Lockead, London, Ont.	

EAST LAMBTON FARMERS' LOAN AND SAVINGS COMPANY.

Head Office, Forest, Ontario. (Company's By-Law No. 29.)

Incorporated under the Buildings Societies Act, R. S. O. 1887, c. 169, by declaration filed with the Clerk of the Peace for the County of Lambton, 19th December, 1891.

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205 ; cf. R. S. O. 1887, c. 169.

Annual Statement

Of the condition and affairs of the East Lambton Farmers' Loan and Savings Company of Forest, Ont., at the 28th February, 1898, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at S. S. King street in the Town of Forest, in the Province of Ontario.

The Board is constituted of eight directors holding office for two years.

The directors and chief executive officers of the Corporation at the 28th February, 1898, were as follows :

Name of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
James Hutton, M.D.....	President	Forest, Ont....	27th March, 1897..	27th March, 1899.
John Shaw.....	Vice-President...	"	" ..	"
William Lemon	Director	"	" ..	"
Peter Cairns	"	"	" ..	"
Wm. N. Ironside.....	"	Thedford.....	28th " ..	26th "
Wm. Nimmo.....	"	Ravenswood ..	" ..	"
Robert J. McCormick	"	Warwick.....	" ..	"
D. N. Sinclair.....	"	Aberarder ...	" ..	"
A. Tripp	Manager and Secretary.....	Forest	27th " ..	27th "

A.—Permanent capital stock: Total amount authorized, $500,000; total amount subscribed, $105,550, as more particularly set out in Schedule A hereto.

SCHEDULE A.

A.—Fixed and permanent capital stock created by virtue of Building Society Act.

Description.	Total amount issued and subsisting at—			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the corporation.
	No. of shares.	Par value of shares.	——		
		$ c.	$ c.	$ c.	$ c.
1. Fully paid.	2,111	50 00	105,550 00	104,412 00	1,138 00
2. Prepaid	.....	.....	.....	.....	....
Totals.....	2,111	50 00	105,550 00	104,412 00	1,138 00

LIST OF SHAREHOLDERS AS AT 28TH FEBRUARY, 1898.

(Not printed.)

BALANCE SHEET AS AT 28TH FEBRUARY, 1898.

Capital and Liabilities.

DR.

——	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
A.—*Permanent Capital Stock or Shares.*		
Item No.		
1. (*a*) Ordinary Joint Stock Capital fully called: Total called, $105,550; Total paid thereon	104,412 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid. No. 10	2,570 80	
6. (*f*) Reserve Fund in respect of (1), (2) or (3).....	4,548 80	
		111,531 60
LIABILILITIES TO THE PUBLIC.		
27. Deposits.....	88,494 59	
28. Interest on deposits, due or accrued or capitalized.....	1,487 21	
		89,981 80
Total actual liabilities.....	.....	201,513 40

Balance Sheet as at 28th February, 1898.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	175,547 76	
10. (*b*) Debts secured by mortgaged land held for sale, sold under agreement	1,050 00	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	5,450 00	
		182,047 76
E.—*Cash:*		
31. (*a*) On hand	49 79	
32 (*b*) In bank	18,926 35	
Accrued interest	146 50	
		19,122 64
F.—*Assets not hereinbefore mentioned.*		
38. (*b*) Office furniture	343 00	343 00
Total of assets owned beneficially by Corporation		201,513 40

Cash Account.

Receipts for the year ending 28th February, 1898.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
I.—Received by the Corporation for its own use.	$ c.	$ c.
A.—*Balance from 28th February, 1897.*		
Item No. (*b*) Cash (not already shown under (1)):—		
2. (i) On hand	24 69	
3. (ii) In bank, special deposit	4,000 00	4,024 69
B.—*Sums Received Wholly or Partly on Capital Stock.*		
4. (*a*) Calls on joint stock permanent capital	4,412 00	
5. (*b*) Premiums on (4)	272 50	4,684 50
C.—*Receipts on Account of Investments, Loans or Debts.*		
(*a*) On Mortgages of Realty:—		
10. (i) Principal	12,878 47	
11. (ii) Interest	9,040 06	
(*b*) On other securities:—		
12. (i) Principal, loans on stocks	1,000 00	22,918 53
D.—*Receipts from Real Estate Owned Beneficially by Corporation.*		
16. (*a*) Sales (not included in any of foregoing items) land sold under agreement		150 00
F.—*Borrowed Money.*		
25. (*a*) Bank or other advances, discounts or overdrafts	73,866 47	
26. (*b*) Borrowed by taking deposits	85,389 79	
27. (*c*) General interest from bank	133 00	159,389 26
Totals		191,166 98

Cash Account.

Expenditure for the year ending 28th February 1898.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
I.—Expended on Corporation Account.		
Item No. A.—*Sums loaned or invested on Capital Account.*	$ c	$ c.
1. (*a*) Loaned on Mortgages of Realty	28,080 94	
(*b*) Loaned or invested in other securities, viz. :—		
2. (i) On stocks	600 00	
		26,680 94
6. (*c*) Real estate purchased transferred from mortgage account	1,200 00	1,200 00
B.—*Expended on Stock Account.*		
8. Dividends (Nos. 8 and 9) paid on permanent stock. (*Extend into Column 1.*)	5,042 80	5,042 80
C.—*Borrowed money (other than foregoing) or interest thereon paid, viz.* :		
18. (*a*) Bank account (principal and interest)	73,824 90	
19. (*b*) Deposits : principal, $59,650.45 ; interest, $2,905.35	62,556 80	
		136,381 70
D.—*Management expenses (other than foregoing).*		
25. (*a*) Salaries and fees	520 00	
26. (*b*) Commission or brokerage	19 50	
28. (*d*) Stationery, postage, printing and advertising	45 79	
30. (*f*) Fuel, rent, taxes (other than 32) and rates	249 65	
E.—*Other expenditures, viz.* :		
33. (*a*) Sundries	38 91	
34. (*b*) Carried to profit and loss	118 25	
		992 10
F.—*Balance.*		
37. (*a*) Cash on hand	49 79	
(*b*) Cash in bank	18,819 65	
		18,869 44
Totals		191,166 98

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 28TH FEBRUARY, 1898.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898, none.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898, none.	
3. Amount of other existing obligations to the Corporation which will mature in 1898, none.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	5,250 00
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3.95%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5.75%.	
7. Of the mortgages held by the Corporation $175,547.76 is on realty situate in Ontario.	175,547 76
8. Loans written off or transferred to real estate account during 1897.....	1,200 00
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No., 1; amount, $1,200.	
10. Aggregate market value of the land mortgaged to the Corporation, $334,700.00	
11. How often are the securities held by the Corporation valued. Nearly all well known to the directors being near this locality and values well maintained.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager	5,000 00
13. When were the accounts of the Corporation last audited? 8th March, 1898, to 28th February, 1898.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). (Not appointed).	

THE ELGIN LOAN AND SAVINGS COMPANY.

Head Office, St. Thomas, Ontario.

Incorporated under the Building Societies Act, R. S. O. 1877, c 164, by declaration filed with the Clerk of the Peace for the County of Elgin, 21st April, 1879.

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205 ; cf. R. S. O. 1877, c. 164, and R. S. O. 1887, c. 169.

Annual Statement

Of the condition and affairs of the Elgin Loan and Savings Company of St. Thomas, Ontario, at the 31st December, 1897.

The head office of the Corporation is at No. 346 Talbot street, in City of St. Thomas, in the Province of Ontario.

The Board is constituted of eight directors, holding office for two years, four retiring each year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
D. McLarty	President	St. Thomas	10th Feb., 1896	14th February, 1898.
John Baird	Vice-President	"	8th Feb., 1897	" 1899.
John McCausland	Director	"	10th Feb., 1896	" 1898.
A. Murray	"	"	8th Feb., 1897	" 1899.
D. K. McKenzie	"	"	10th Feb., 1896	" 1898.
Albert Couse	"	"	10th Feb., 1896	" 1898.
George Wegg	"	"	8th Feb., 1897	" 1899.
L. Millington	"	"	8th Feb., 1897	" 1899.
George Rowley	Manager and Sec'y.	"	21st April, 1879	Unlimited.

A. Permanent capital stock: Total amount authorized, $625,000; total amount subscribed, $625,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a) Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the corporation.
	No. shares.	Par value.	——		
		$	$ c.	$ c.	$ c.
1. Fully paid	12,500	50	625,000 00	229,493 78	395,506 22
2. Prepaid					
Totals	12,500	50	625,000 00	229,493 78	395,506 22

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

——	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS.)		
A —*Permanent Capital Stock or Shares.*		
Item No.		
2. (*a*) Ordinary joint stock capital 50% called; total called, $312,500; total paid thereon	229,493 78	
5 (*e*) Unappropriated profits in respect of (2)	781 12	
6. (*f*) Reserve fund in respect of (2)	19,000 00	
		249,274 90
LIABILITIES TO THE PUBLIC.		
27. Deposits	151,953 15	151,953 15
Total actual liabilities		401,228 05

Balance Sheet at 31st December, 1897.

Cr.

	$ c.	$ c.
1.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :—		
5. (*b* Freehold land (including buildings) other than foregoing (farm and timber lands)	2,467 25	2,467 25
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	333,184 52	
10. (*b*) Debts secured by mortgaged land held for sale	37,091 80	
		370,276 32
12. (*d*) Of the debts mentioned in items 9, 10 and 11 the sum of $2,266.00 is due by directors or officers of the Corporation. (Not extended)		
C.—*Debts not above Enumerated for which the Corporation Holds Securities as follows* :		
20. (*h*) Debts secured only by permanent stock or shares of the Corporation		8,025 54
E.—*Cash.*		
32. (*b*) In bank		20,458 94
Total of assets owned beneficially by Corporation		401,228 05

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Permanent capital, including reserves. (Column 3)	Total. (Column 4.)
	$ c.	$ c.	$ c.
I.—Received by the Corporation for its own use.			
B.—*Sums Received Wholly or Partly on Capital Stock.*			
Item No. 4. (*a*) Calls on Joint Stock permanent capital	.....	1,529 37	1,529 37
C.—*Receipts on Account of Investments, Loans or Debts.*			
(*a*) On Mortgages of Realty :—			
10. (i) Principal	.....	35,921 42	35,921 42
11. (ii) Interest	22,146 96	.....	22,146 96
D.—*Receipts from Real Estate Owned Beneficially by Corporation.*			
16. (*a*) Sales (not included in any of foregoing items)	.....	3,600 00	3,600 00
F.—*Borrowed Money.*			
25. *b*. Borrowed by taking deposits	.....	194,610 09	194,610 09
G.—*Receipts from other Sources, viz.* :			
30. (*a*) Interest on bank balance	242 25	.....	242 25
Totals	.....	235,660 88	258,050 09

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c.	$ c.
A.—*Sums Loaned or Invested on Capital Account.*			
Item No. 1. (*a*) Loaned on Mortgages of Realty, including insurance and taxes, item No. 32	.....	22,644 75	22,644 75
B.—*Expended on Stock Account.*			
8. Dividends paid on permanent stock. (*Extend into Column 1*)	12,573 68	.....	12,573 68
C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*			
18. (*a*) Bank account (principal and interest)	.....	23,513 10	23,513 10
19. (*b*) Deposits: Principal, $170,871.91; interest, $5,857 55	.....	176,729 46	176,729 46
D.—*Management Expenses (other than foregoing).*			
25. (*a*) Salaries and fees	1,176 00		
26. (*b*) Commission or brokerage	32 05		
28. (*d*) Stationery, postage, printing and advertising.	121 00		
29. (*e*) Law costs (other than paid by borrowers)	9 17		
30. (*f*) Fuel, rent, taxes (other than in 32) and rates..	448 69		1,786 91
E.—*Other Expenditures, viz.:*			
33. (*a*) Municipal tax on dividends, etc	180 00		
34. (*b*) Interest on overdraft at bank	163 25		343 25
F.—*Balance.*			
(*b*) Cash in bank	.....	20,458 94	20,458 94
Totals	14,703 84	243,345 25	258,059 09

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. No obligation except to depositors.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4.10%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of realty, 5.65%.	
7. Of the mortgages held by the Corporation $370,276.32 is on realty situate in Ontario, and none on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897, $985 written off ..	985 00
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No., none; amount, none.	
10. Aggregate market value of the land mortgaged to the Corporation, about	560,000 00
11. How often are the securities held by the Corporation valued? In case of doubtful loans, annually or oftener.	
12. (a) What office s of the Corporation are under bond and for what sum respectively? The Manager, $10,000.	
13. When were the accounts of the Corporation last audited? 28th January, 1898.	
14. Names and addresses of the auditors respectively for 1887 and 1898 (if appointed)? For 1897, Thomas Leitch, Hamilton, and Chas. J. Ven, Glencoe, for past year; for 1898, Thomas Leitch, Hamilton; Alex. Darroch, St. Thomas.	

THE FREEHOLD LOAN AND SAVINGS COMPANY.

Head Office, Toronto.

Constating Instruments.

1859. Declaration of incorporation under 9 Victoria, c. 90 (Province of Canada), and Consol. Statutes U. C. chap. 53, filed with Clerk of Peace for County of York 27th April, 1859. Original corporate name, "The Freehold Permanent Building and Savings Society."

1873. 36 V. c. 104 (D.): changed corporate name to The Freehold Loan and Savings Company.

1886. 49 V. c 103 (D.): defined borrowing powers; empowered Company to issue debenture stock, etc.

1887. 50 1 V. c 111 (D): empowered Company to extend its operations to the whole of the Dominion.

1887. 50 1 V. c. 112 (D): amended next preceding Act. See secs. 1 and 2.

For the lending and the borrowing powers of the Company, see the Acts above cited, also R. S. O. 1877, c. 164; R. S. O. 1887, c. 169, and R. S. O. 1897, c 205.

Annual Statement.

Of the condition and affairs of the Freehold Loan and Savings Company of Toronto, Ont., at the 30th April, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 54-66 Victoria street in the City of Toronto, in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 30th April, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
C. H. Gooderham	President	Toronto	June, 1897	June, 1898
T. S. Stayner	Vice-President	"	"	"
J. C. Aikins	Director	"	"	"
Hugh Ryan	Director	"	"	"
W. F. McMaster	Director	"	"	"
H. S. Howland	Director			
S. C. Wood	Manag. Director.			

A. Permanent capital stock: total amount authorized, $3,800,000; total amount subscribed, $3,223,500, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*a*).—*Fixed and permanent capital stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. shares.	Par value.			
		$	$ c.	$ c.	$ c.
1. Fully paid	8,430	100	843,000 00	843,000 00	.....
2. 20 per cent. paid	23,805	100	2,380,500 00	476,100 00	1,904,400 00
Totals	32,235	.....	3,223,500 00	1,319,100 00	1,904,400 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 30TH APRIL, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. *Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: total called $843,000; total paid thereon	843,000 00	
2. (*b*) Ordinary joint stock capital, 20 per cent. called: total called $476,100; total paid thereon	476,100 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	39,573 00	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	659,550 00	
7. (*g*) Contingent fund in respect of (1), (2) or (3)	31,140 65	
		2,049,363 65
LIABILITIES TO THE PUBLIC.		
27. Deposits	476,523 51	
28. Interest on deposits, due, or accrued or capitalized	8,033 03	
29. Debentures issued in Canada	663,448 68	
30. Interest due and accrued on (29)	10,834 29	
31. Debentures issued elsewhere than in Canada	2,875,894 74	
32. Interest due and accrued on (31)	48,509 98	
		4,083,241 23
Total actual liabilities	.....	6,132,607 88

Balance Sheet as at 30th April, 1897.

Cr.

		$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.			
A.—*Immovable property owned beneficially by Corporation.*			
1. (*a*) Office premises situate as follows :			
2. (i) At Toronto, held in freehold		354,076 37	
5. (*b*) Freehold land (including buildings) other than foregoing		444,207 12	798,283 49
B.—*Debts secured by mortgages of land.*			
9. (*a*) Debts (other than item 10) secured by mortgages of land		4,411,207 29	
10. (*b*) Debts secured by mortgaged land held for sale		593,138 88	5,004,346 17
C.—*Debts not above enumerated for which the Corporation holds securities as follows :*			
20. (*h*) Debts secured only on permanent stock or shares of the corporation		30,823 30	
22. (*j*) Debts secured by bonds, Board of Trade, Toronto		2,020 00	
23. (*k*) Debts secured by rents accrued on Companies' building		2,587 98	35,431 28
E.—*Cash.*			
31. (*a*) On hand		107,811 27	
32. (*b*) In bank as follows :			
33. (i) In sundry banks at Toronto	$206,977 11		
34. (ii) In bank at Winnipeg	22,407 35		
	$229,384 46		
36. (iv) Less overdraft, Bank of Scotland, London, Eng	49,974 36		
		179,410 10	287,221 37
F.—*Assets not hereinbefore mentioned.*			
37. (*a*) Office furniture and fixtures			5,548 34
38. (*b*) Interest on bank deposit			1,777 23
Total of assets owned beneficially by Corporation			6,132,607 88

Cash Account.

Receipts for the year ending 30th April, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.).
	$ c.
I.—Received by the Corporation for its own use.	
A.—*Balances from 30th April, 1896.*	
Item No. 1. (*b*) Cash (not already shown under (1)):	
2. (i) On hand	7,362 58
3. (ii) In bank	184,732 99
C.—*Receipts on account of investments, loans or debts.*	
(*a*) On Mortgages of Realty:	
10. (i) Principal 11. (ii) Interest	825,763 75
(*b*) On other securities:	
12. (i) Principal	8,530 62
13. (ii) Interest	7,392 85
D.—*Receipts from real estate owned beneficially by Corporation.*	
17. (*b*) Rents	16,778 60
F.—*Borrowed money.*	
25. (*a*) Bank or other advances, discounts or overdrafts	49,974 36
26. (*b*) Borrowed by taking deposits	252,755 71
27 (*c*) Borrowed on debentures	603,546 73
Totals	1,956,838 19

Cash Account.

Expenditure for the year ending 30th April, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)
		$ c.
	I.—Expended on Corporation Account.	
	A.—*Sums Loaned or Invested on Capital Account.*	
1.	(*a*) Loaned on Mortgages of Realty	421,288 89
	(*b*) Loaned or invested in other securities, viz. :	
2.	(i) On Company's stock	26,471 80
	B.—*Expended on Stock Account.*	
8.	Dividends paid on permanent stock. (*Extend into column 1.*) Including tax, $1,539.38	80,685 38
	C.—*Borrowed Money (other than foregoing) or Interest thereon Paid, viz.* :	
19.	(*b*) Deposits: Principal, $; interest, $	255,302 35
20.	(*c*) Debentures issued in Canada : Principal, $166,601.45 ; interest, $28,061.41.	194,662 86
21.	(*d*) Debentures issued elsewhere : Principal, $464,345.23 ; interest, $124,371.75	588,716 98
	D.—*Management Expenses (other than foregoing).*	
25.	(*a*) Salaries and fees	18,800 00
26.	(*b*) Commission or brokerage	6,238 62
28.	(*d*) Stationery, postage, printing and advertising, and furniture	5,490 65
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates	2,980 00
31.	(*g*) Travelling expenses and inspectors' salaries	7,953 75
	E.—*Other Expenditures, viz.* :	
33.	(*a*) Company's buildings	11,051 18
	F.—*Balance.*	
37.	(*a*) Cash on hand $107,811 27	
	(*b*) Cash in various banks 229,384 46	
		337,195 73
	Totals	1,956,838 19

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 30TH APRIL, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	1,090,034 15
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898, say	1,000,000 00
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3.48%; on debentures, 3.98%; on debenture stock,	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5.3%.	
7. Of the mortgages held by the Corporation $4,248,106 54 is on realty situate in Ontario, and $1,200,446.75 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	123,031 00
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897—number, 48; amount	128,479 00
10. Aggregate market value of the land mortgaged to the Corporation	12,000,000 00
11. How often are the securities held by the Corporation valued? Annually or oftener.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Managing Director, $15,000; Cashier, $6,000; two Inspectors, $2,000 each; Accountant, $2,000; Assistant Accountant, $2,000; Clerk, $2,000.	
13. When were the accounts of the Corporation last audited? Accounts are audited monthly.	
14. Name and address of the auditors respectively for 1897 and 1898 (if appointed). Joseph Blakeley, W. A. Douglas, Toronto.	

THE FRONTENAC LOAN AND INVESTMENT SOCIETY.

Head Office, Kingston, Ontario.

Incorporated under the Building Societies' Act, Consolidated Statutes of Upper Canada, chap. 53, by declaration filed with the Clerk of the Peace for the County of Frontenac, 13th August, 1863.

The lending and the borrowing powers are governed by the Loan Corporations Act, R.S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Frontenac Loan and Investment Society of Kingston, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 87 Clarence street, in the City of Kingston, in the Province of Ontario.

The Board is constituted of five directors, holding office for two years.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address	Term of office.	
			Began (date).	Will end (date).
Sir Richard Cartwright	President	Kingston, Ont.	March, 1896	March, 1898
R. Vashan Rogers, LL.D.	Vice-President	"	" 1896	" 1898
Lt.-Colonel S. C. McGill	Director	"	" 1897	" 1899
Martin Strachan	"	"	" 1896	" 1898
Lt.-Col. Henry R. Smith	"	"	" 1897	" 1899
Thomas Briggs	Manager	"	December, 1863	
D. Callaghan	Accountant	"	April, 1864	

A. Permanent capital stock: total amount authorized, unlimited; total amount subscribed, $200,000, as more particularly set out in Schedule A hereto.

SCHEDULE A

(a).—*Fixed and permanent capital stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st Dec., 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Per value of shares.	—		
		$	$	$ c.	$ c.
1. Fully called	4,000	50 00	200,000	200,000 00	
Totals	4,000	50 00	200,000	200,000 00	

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

Dr.

Item No.		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	A—*Permanent Capital Stock or Shares.*		
1.	(a) Ordinary joint stock capital fully called; total called, $200,000; total paid thereon	200,000 00	
4.	(d) Dividends declared in respect of (1), but not yet paid	5,247 50	
6.	(f) Reserve Fund in respect of (1)	30,000 00	
7.	(g) Contingent Fund in respect of (1)	7,033 09	
			242,280 59
	LIABILITIES TO THE PUBLIC.		
27.	Deposits	271,375 85	
40.	Other liabilities to the public, viz.:		
41.	(a) Solicitors	2 25	
			271,378 1
	Total actual liabilities		513,658 69

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :		
2. (i) At Kingston, Ont, held in freehold	4,333 86	
5. (*b*) Freehold land (including buildings) other than foregoing	32,359 72	36,693 58
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land, including interest	351,997 85	
10. (*b*) Debts secured by mortgaged land held for sale	39,989 62	391,987 47
C.—*Debts not above enumerated for which the Corporation holds securities as follows :*		
16. (*d*) Debts secured by Loan Corporations' Debentures	11,000 00	
(*h*) Debts secured only by Permanent Stock or Shares of the Corporation	35,175 34	
22. (*j*) Bank Deposit Receipts, Temporary Loan thereon	5,124 93	51,300 27
E.—*Cash.*		
31. (*a*) On hand	132 50	
32. (*b*) In bank	23,218 62	23,351 12
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Agents at Winnipeg	36 46	
38. (*b*) Office furniture	192 09	
39. (*c*) Reserve Fund Investment	10,097 70	10,326 25
Total of assets owned beneficially by Corporation		513,658 69

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Total. (Column 1.)
	I.—Received by the Corporation for its own use.	
	A.—*Balances from 31st December, 1896.*	$ c.
	(i) Cash (not already shown under (1)):	
2.	(i) On hand	667 29
3.	(ii) In bank	7,511 11
	C.—*Receipts on account of Investments, Loans or Debts.*	
	(*a*) On Mortgages of Realty:	
10.	(i) Principal	38,083 61
11.	(ii) Interest	
	(*b*) On other securities:	
12.	(i) Principal	15,604 99
13.	(ii) Interest or Dividends	1,061 95
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*	
17.	(*b*) Rent	1 087 56
	F.—*Borrowed Money.*	
26.	(*b*) Borrowed by taking deposits	263,755 96
	G.—*Receipts from other sources, viz.:*	
30.	(*a*) Solicitors' conveyancing fees received	90 05
	(*b*) Interest on current bank deposit	307 59
	(*c*) " Agents at Winnipeg, Man	6 12
	Totals	328,176 23

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Total. (Column 4).
	I.—Expended on Corporation Account.	
	A.—*Sums Loaned or Invested on Capital Account.*	
1.	(*a*) Loaned on Mortgages of Realty	17,650 77
	(*b*) Loaned or invested in other securities, viz.:—	
2.	(i) Shareholders on their stock	4,980 00
3.	(ii) Temporary loans on bank deposit receipts	8,000 00
	B.—*Expended on Stock Account.*	
8.	Dividends paid on permanent stock	9,877 50
	C.—*Borrowed Money (other than foregoing) or Interest thereon paid, viz.:*	
19.	(*b*) Deposits: Principal	258,980 05
	Deposits: Interest, $74.17 on transient withdrawals	74 17
	D.—*Management Expenses (other than foregoing).*	
25.	(*a*) Salaries and Fees	3,354 00
26.	(*b*) Commission or Brokerage	23 22
27.	(*c*) Advances to Agents	19
28.	(*d*) Stationery, Postage, Printing and Advertising	120 69
29.	(*e*) Law costs	145 10
30.	(*f*) Fuel, Rent, Taxes (other than in 32) and rates	332 48
31.	(*g*) Travelling expenses	75
	E.—*Other Expenditures, viz.:*	
33.	(*a*) Registration Fee	105 00
34.	(*b*) Real Estate	999 80
35.	(*c*) Solicitors Conveyancing Fees	152 02
36.	(*d*) Telephone, $25.00; Repairs, $3.50; Incidentals, 87c	29 37
	F.—*Balance.*	
37.	(*a*) Cash on hand $ 132 50	
	(*b*) Cash in various banks 23,218 62	
		23,351 12
	Totals	328,176 23

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	1,000 00
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3.35 %.	
7. Of the mortgages held by the Corporation $316,721.28, is on realty situate in Ontario, and $75,266.19 is on realty situate elsewhere.	
10. Aggregate market value of the land mortgaged to the Corporation. Cannot say without putting them up for sale.	
11. How often are the securities held by the Corporation valued? Careful valuation at time of making loan.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager $ ...., Accountant $4,000, Clerk $2,000.	
13. When were the accounts of the Corporation last audited? February, 1898, for year ending 31st December, 1897.	
14. Names and address of the auditors respectively for 1897, F. R. Sargent and John Kinghorn.	

THE GREY AND BRUCE LOAN COMPANY.

(Formerly The Owen Sound, Grey and Bruce Loan and Savings Company.)

Head Office, Owen Sound, Ontario.

Incorporated under the Building Societies Act, R. S. O. 1887, c. 169, as a permanent Building Society, under the name of the Owen Sound Grey and Bruce Loan and Savings Company, by declaration filed with the Clerk of the Peace for the County of Grey, 10th May, 1889.

The corporate name was, by Order in Council of Ontario, 15th September, 1897, changed to The Grey and Bruce Loan Company.

The lending and the borrowing powers of the Company are governed by the Loan Corporations Act, R. S. O. 1897, c. 205; cf. R. S. O. 1887, c. 169.

Annual Statement

Of the condition and affairs of The Grey and Bruce Loan Company, of Owen Sound, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is on Baker street, Town of Owen Sound, in the Province of Ontario.

The Board is constituted of ten directors holding office for one year

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
S. J. Parker	President	Owen Sound	3rd February, 1897.	3rd February, 1898.
B. McKnight	Vice-President	"	"	"
Hugh Taylor	Director	"	"	"
Robert Wightman	Director	"	"	"
James Gardner	Director	Meaford	"	"
Robert Thompson	Director	Owen Sound	"	"
William Q. Brown	Director	"	"	"
John McDonald	Director	Chatsworth	"	"
Wm. Thomson	Director	Tara	"	"
George Inglis	Director	Owen Sound	"	"
Wm. P. Telford	Manager / Secretary	"		

A. Permanent capital stock: total amount authorized, $500,000; Total amount subscribed, $444,050.00, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st Dec., 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	—		
		$ c.	$ c.	$ c.	$ c.
1. Fully called and paid	2,669	50 00	133,450 00	133,450 00	
2. Partly called and paid	6,212	50 00	310,600 00	65,670 00	244,930 00
Totals	8,881		444,050 00	199,120 00	244,930 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897

Capital and Liabilities

DR.

Item No.	—	$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	A.—*Permanent Capital Stock or Shares.*		
1.	(*a*) Ordinary joint stock capital fully called: total called, $133,450.00; total paid thereon	133,450 00	
2.	(*b*) Ordinary joint stock capital, 20% called: total called, $60,000.00; total paid thereon	60,000 00	
3.	(*c*) Ordinary joint stock capital, 50% called: total called, $5,300.00; total paid thereon	5,670 00	
4.	(*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	5,915 12	
5.	(*e*) Unappropriated profits in respect of (1), (2) or (3)	70 64	
6.	(*f*) Reserve fund in respect of (1), (2) or (3)	7,000 00	
7.	(*g*) Contingent fund in respect of (1), (2) or (3)	642 71	
			212,748 47
	LIABILITIES TO THE PUBLIC.		
27.	Deposits	48,157 70	
28.	Interest on deposits, accrued	1,262 17	
29	Debentures in Canada	*120,210 00	
30.	Interest due and accrued on (29)	2,114 46	
39.	Due on loans in process of completion or to pay assumed mortgages and accrued interest	6,073 90	
			177,818 23
	Total actual liabilities		390,566 70

* Mortgages to the amount of $106,345.00 are held in trust by Wm. P. Telford as collateral security for $80,000 of debentures held by the Toronto General Trusts Company.

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	360,305 89	
10. (*b*) Debts secured by mortgaged land held for sale	988 13	
11. (*c*) Interest due and accrued on items 9 and 10 and not included therein, also insurance and taxes	19,411 28	
		380,705 30
C.—*Debts not above enumerated for which the Corporation holds securities as follows:*		
20. (*h*) Debts secured only by permanent stock or shares of the Corporation and notes	2,000 00	
26. (*n*) Interest due and accrued on items 14 to 25 and not included therein	8 54	
		2,008 54
E.—*Cash.*		
31. (*a*) On hand	275 70	
32. (*b*) In bank	7,479 16	
		7,754 86
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Books	60 00	
38. (*b*) Office furniture	38 00	
		98 00
Total assets owned beneficially by Corporation		390,566 70

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Total. (Column 4.)
	I.—Received by the Corporation for its own use.	
		$ c.
	A.—*Balances from 31st December, 1896.*	
	(b) Cash (not already shown under (1)):—	
2.	(i) On hand	275 21
3.	(ii) In bank	10,850 65
	B.—*Sums Received Wholly or Partly on Capital Stock.*	
4.	(a) Calls on joint stock permanent capital	7,425 00
5.	(b) Premiums on (4) $373.00; transfer fees, $13.24	386 24
	C.—*Receipts on Account of Investments, Loans or Debts.*	
	(a) On Mortgages of Realty:—	
10.	(i) Principal	19,291 43
11.	(ii) Interest, $19,763.36; insurance, $516.97; fees, $23.50	20,303 83
	(b) On other securities:—	
12	(i) Principal	1,837 00
13.	(ii) Interest or dividends	68 10
	(c) Unsecured debts:—	
15.	(ii) Interest on credit balances in bank	219 00
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*	
17.	(b) Rent from joint tenant	165 00
	F.—*Borrowed Money.*	
26.	(b) Borrowed by taking deposits	73,436 52
27.	(c) Borrowed on debentures	24,310 00
	G.—*Receipts from Other Sources, viz.:*	
30.	(a) Refund on coupon and commission of cheques	2 83
	(b) Amounts left for remittance to other Companies	92 05
	Totals	158,662 86

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Total. (Column 1.)
		$ c.
	I.—Expended on Corporation Account.	
	A.—*Sums Loaned or Invested on Capital Account.*	
1.	(*a*) Loaned on Mortgages of Realty	44,898 04
	(*b*) Loaned or invested in other securities, viz.:	
2.	(i) On the Company's stock	2,300 00
	B.—*Expended on Stock Account.*	
8.	Dividends paid on permanent stock. (*Extend into column 1*)	11,556 32
	C.—*Borrowed Money (other than foregoing) or Interest thereon Paid, viz.:*	
19.	(*b*) Deposits: Principal, $67,705.21; interest, $1,601.30	69,306 51
20.	(*c*) Debentures issued in Canada: Principal, $13,600; interest, $5,211.66	18,811 66
	D.—*Management Expenses (other than foregoing).*	
25.	(*a*) Salaries and fees	1,312 00
28.	(*d*) Stationery, postage, printing and advertising and petty expenses	295 35
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates	716 01
32.	(*h*) Insurances or taxes advanced on property mortgaged to the Company and repairs to buildings	831 49
	E.—*Other Expenditures, viz.:*	
33.	(*a*) Interest forwarded	846 62
34.	(*b*) Mortgage discharge and valuators' fees	23 50
35.	(*c*) Office fixtures	10 50
	F.—*Balance.*	
37.	(*a*) Cash on hand $ 275 70	
	(*b*) Cash in bank 7,479 16	7,754 86
	Totals	158,662 86

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	18,100 00
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898, none.	
3. Amount of other existing obligations of the Corporation which will mature in 1898, Depositors' accounts and deposit receipts	48,157 70
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	48,005 00
5. Average rate of interest per annum paid by the Corporation during 1897, on deposits, 3.587%; on debentures, 4.784%; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6.63%; on other securities, 6%.	
7. Of the mortgages held by the Corporation all are on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897	364 25
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897—number, 1; amount	3,300 00
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager, $10,000; Solicitor, $4,000.	
13. When were the accounts of the Corporation last audited? To 31st December, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed): For 1897, Ewing Cameron and D. R. Dobie. For 1898, D. R. Dobie and C. A. Fleming.	

THE GUELPH AND ONTARIO INVESTMENT AND SAVINGS SOCIETY.

Head Office, Guelph, Ont.

Incorporated under the Building Societies' Act (Consol. Statutes U. C. Chap. 53), by declaration filed with the Clerk of the Peace for the County of Wellington, 19th January, 1876.

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Guelph and Ontario Investment and Savings Society of Guelph, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is on corner of Market Square and Wyndham street, in the City of Guelph, in the Province of Ontario.

The Board is constituted of nine directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Current term of office.	
			Began (date).	Will end (date).
Alex. B. Petrie	President	Guelph	February, 1898	February, 1899.
Robert Melvin	Vice-President	"	"	"
David Stirton	Director	"	"	"
H. Howitt, M.D	Director	"	"	"
John M. Bond	Director	"	"	"
Jas. Innes	Director	"	"	"
Jas. P. Phin	Director	Hespeler	"	"
John Phin	Director	"	"	"
G. D. Forbes	Director	"	"	"
J. E. McElderry	Manager / Secretary	Guelph	"	"

A. Permanent capital stock: total amount authorized, $1,000,000; total amount subscribed, $720,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.			
		$	$ c.	$ c.	$ c.
1. Fully called	7,000	50	350,000 00	350,000 00	
3. Instalment (payable by fixed periodical payments, and still in process of payment)	7,400	50	370,000 00	74,000 00	296,000 00
Totals	14,400		720,000 00	424,000 00	296,000 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: total called, $350,000; total paid thereon	350,000 00	
2. (*b*) Ordinary joint stock capital 20 per cent. called: total called, $74,000; total paid thereon	74,000 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	16,960 00	
6. (*f*) Reserve Fund in respect of (1), (2) or (3)	155,125 80	
7. (*g*) Contingent Fund in respect of (1), (2) or (3)	25,343 06	
		621,428 86
LIABILITIES TO THE PUBLIC.		
27. Deposits	495,070 11	
28. Interest on deposits, due, or accrued or capitalized	6,870 18	
29. Debentures issued in Canada	539,118 07	
30. Interest due and accrued on (29)	10,274 25	
39. Due on loans in process of completion or to pay assumed mortgages.	35,821 33	
		1,037,153 94
Total actual liabilities		1,708,582 80

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property owned Beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing		28,832 27
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	1,506,869 22	
10. (*b*) Debts secured by mortgaged land held for sale	21,579 21	1,528,448 43
C.—*Debts not above enumerated for which the Corporation holds Securities as follows.*		
14. (*b*) Debts secured by municipal bonds or debentures	1,249 92	
15. (*c*) Debts secured by public school debentures	751 21	
16. (*d*) Debts secured by Loan Corporations' debentures	625 00	
20. (*h*) Debts secured only by permanent stock or shares of the Corporation.	8,706 75	
26. (*n*) Interest due or accrued on items 14 to 20 and not included therein	255 82	11,588 70
E.—*Cash.*		
32. (*b*) In bank, Guelph		139,713 40
Total of assets owned beneficially by Corporation		1,708,582 80

Cash Account.

Receipts for the year ending 31st December, 1897.

		Amount carried to capital account. Permanent capital including reserve. (Column 3.)	Total. (Column 4.)
		$ c.	$ c.
	I.—Received by the Corporation for its own use.		
Item No.	A.—*Balances from 31st December, 1896.*		
3.	(ii) In bank		55,381 26
	B.—*Sums Received Wholly or Partly on Capital Stock.*		
4.	(*a*) Calls on joint stock permanent capital	1,258 11	
5.	(*b*) Premiums on (4)	125 80	1,383 91
	C.—*Receipts on Account of Investments, Loans or Debts.*		
	(*a*) On Mortgages of Realty :—		
10.	(i) Principal		310,547 18
11.	(ii) Interest		
	(*b*) On other securities :—		
12.	(i) Principal		6,791 89
13.	(ii) Interest or dividends		639 80
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*		
16.	(*a*) Sales (not included in any of foregoing items)		8,615 00
17.	(*b*) Rents		1,410 00
	F.—*Borrowed Money.*		
26.	(*b*) Borrowed by taking deposits		856,883 44
27.	(*c*) Borrowed on debentures		216,634 01
	G.—*Receipts from other Sources, viz.*		
30.	(*a*) Back interest		2,286 48
	(*b*) Cost of valuation and inspection paid by borrowers		491 20
	(*c*) Exchange collection, charges, etc		245 74
	Totals		1,461,309 91

Cash Account.

Expenditure for the year ending 31st December, 1897.

		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
		$ c.	$ c.
	I.—Expended on Corporation Account.		
Item No.	A.—*Sums Loaned or invested on Capital Account.*		
1.	(*a*) Loaned on Mortgages of Realty, including renewals		229,279 68
	(*b*) Loaned or invested in other securities, viz. :		
2.	(i) Loaned on debentures		675 00
3.	(ii) Loaned on stock		6,675 00
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock. (*Extend into column 1*)	33,851 57	33,851 57
	C.—*Borrowed Money (other than foregoing) or interest thereon Paid, viz.* :		
19.	(*b*) Deposits : Principal, $812,146.54 ; interest, $570.13		812,716 67
20.	(*c*) Debentures issued in Canada : Principal, $205,526.48 ; interest, $21,671.95		227,198 43
	D.—*Management Expenses (other than foregoing).*		
25.	(*a*) Salaries and fees	6,562 43	
26.	(*b*) Commission or brokerage	578 66	
28.	(*d*) Stationery, postage, printing and advertising	716 44	
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates	1,595 18	
31.	(*g*) Travelling expenses (inspector's)	316 38	
	(*gg*) Inspector's salary	510 00	
32.	(*h*) Insurances or taxes advanced on property mortgaged to the Corporation, included in No. 1, and sundry items of expense not included in above	596 08	
			10,875 17
33.	(*i*) Expended on property owned by Company, insurance, etc.		324 99
37.	(*b*) Cash in bank		139,713 40
	Totals		1,461,309 91

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	230,813 80
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898; none.	
3. Amount of other existing obligations of the Corporation which will mature in 1898, none, exclusive of deposits.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	581,762 17
5. Average rate of interest per annum paid by the Corporation during 1897, on deposits, 2.964%; on debentures, 4.037%; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5.721%; on other securities, 5.858%.	
7. Of the mortgages held by the Corporation $1,528,448.43 is on realty situate in Ontario and none is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	20,677 19
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897—number, 4; amount	9,838 91
10. Aggregate market value of land mortgaged to the Corporation, $2,740,108.	
11. How often are the securities held by the Corporation valued? Annually.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager, $10,000, and five Clerks for $10,000.	
13. When were the accounts of the Corporation last audited? 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed) A. J. Brewster, Hespeler; J. W. Kilgour, Guelph.	

HAMILTON MUTUAL BUILDING SOCIETY.

Head Office, Hamilton, Ont.

Incorporated under the Building Societies' Act (R. S. O. 1887, c. 169) by declaration filed with the Clerk of the Peace for the County of Wentworth, 31st October, 1890.

The lending and the borrowing powers are governed by the Loan Corporations Act, R S O 1897, c. 205.

Annual Statement

Of the condition and affairs of the Hamilton Mutual Building Society of Hamilton Ont., at the 30th November, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 100 King street East, in the City of Hamilton, in the Province of Ontario.

The Board is constituted of ten directors holding office for one and two years.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Current term of office.	
			Began (date).	Will end (date).
Alfred Ward	President	Hamilton, Ont	30th November, 1897	30th November, 1899
W. J. Morden..	Vice-President.	"	" 1896	" 1898
Jas. Orr Callaghan	Director	"	"	"
A. H. McKeown	Director	"	"	"
J. T. Crawford....	Director	"	"	"
G. W. Spicer.....	Director	"	"	"
G. W. Clarke	Director	"	"	"
G. H. Richmond	Director	"	" 1897	" 1899
M. H. Little	Director	"	"	"
Egerton Healey	Director.....	"	"	"
Walter Anderson	Secretary.....	"	" 1897	" 1898

A. Instalment capital stock: total amount authorized, $600,000; total amount subscribed, $539,400, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a) Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value.	—	—	—
		$	$ c.	$ c.	$ c.
1. Fully paid	.....	.....	.....	.....	.....
3. Instalment (payable by fixed periodical payments, and still in process of payment)	2,697	200	539,400 00	41,328 55	.....
Totals.....	2,697	200	539,400 00	41,328 55	.....

LIST OF SHAREHOLDERS AS AT 30TH NOVEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 30TH NOVEMBER, 1897.

Capital and Liabilities.

DR.

—	—	—
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).	$ c.	$ c.
A.—*Permanent Capital Stock or Shares.*		
8 (*h*) Instalment permanent stock (payable by fixed periodical payments): total subscribed, $539,400.00, on which has been paid.	41,328 55	
10. (*j*) Unappropriated profits on (8).....	21,924 91	
Total actual liabilities	.....	63,253 46

BALANCE SHEET AS AT 30TH NOVEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land		58,337 12
C.—*Debts not above enumerated for which the Corporation holds Securities as follows.*		
22. (*j*) Debts secured by instalment permanent stock (arrears bearing interest)		4,648 89
D.—*Unsecured Debts.*		
30. (*d*) Interest due or accrued on Bank Deposit and not included therein		51 00
E.—*Cash.*		
31. (*a*) On hand	23 32	
32. (*b*) In bank	193 13	
		216 45
Total of assets owned beneficially by Corporation		63,253 46

Cash Account.

Receipts for the year ending 30th November, 1897.

Item No.		Total. (Column 4).
	I.—Received by the Corporation for its own use.	
	A.—*Balances from 30th November, 1896.*	
	(*b*) Cash (not already shown under (1))	
2.	(i) On hand	28 79
3.	(ii) In bank	2,409 41
	B. *Sums Received Wholly or Partly on Capital Stock.*	
8.	(*c*) Dues on Instalment Building Society Stock	5,704 33
	C.—*Receipts on Account of Investments, Loans or Debts.*	
	(*a*) On Mortgages of Realty :—	
10.	(i) Principal	4,909 78
11.	(ii) Interest	754 80
	(*b*) On other Securities :—	
13.	(ii) Interest or Dividends	44 42
	(*c*) Unsecured Debts :—	
14.	Insurance Premiums repaid	13 60
	E.—*Miscellaneous.*	
19.	(*b*) Premium or Bonus on Loans	138 25
20.	(*c*) Membership or Entry Fees (being income of corporation)	6 00
21.	(*d*) Fines	37 77
	G.—*Receipts from other Sources, viz.:*	
30.	(*a*) Transfer Fees	9 00
	Totals	14,056 13

Cash Account

Expenditure for the year ending 30th November, 1897.

			Total. (Column 4.)
			$ c.
	I.—Expended on Corporation Account.		
	A. *Sums Loaned or Invested on Capital Account.*		
Item No.			
1.	(*a*) Loaned on Mortgage of Realty		13,100 00
	D.—*Management Expenses (other than foregoing).*		
25.	(*a*) Salaries and fees		510 00
28.	(*d*) Stationery, postage, printing and advertising		78 20
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates		75 00
31.	(*g*) Travelling expenses		9 00
32.	(*h*) Insurance and taxes advanced on property mortgaged to the Corporation		37 48
	E.—*Other Expenditures, viz.:*		
33.	(*a*) Registration and fee, Ontario Government		30 00
	F.—*Balance.*		
37.	(*a*) Cash on hand	$ 23 32	
	(*b*) Cash in bank	193 13	216 45
	Totals		14,056 13

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 30TH NOVEMBER, 1897.

	$ c.
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5½% ; on other securities.	
7. Of the mortgages held by the Corporation, $58,337.12 is on realty situate in Ontario, and $ is on realty situate elsewhere.	
10. Aggregate market value of the land mortgaged to the Corporation, $84,362.00.	
11. How often are the securities held by the Corporation valued ? Annually.	
12. (a) What officers of the Corporation are under bond and for what sum respectively ? Secretary-Treasurer, $1,000 guarantee bond.	
13. When were the accounts of the Corporation last audited ? 30th November, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed). For 1897, F. H. Whitton, H. Jones and E. A. Middlemiss ; for 1898, F. H. Whitton, E. A. Middlemiss and R. E. Kinsman.	

THE HAMILTON PROVIDENT AND LOAN SOCIETY.

Head Office, Hamilton, Ont.

Constating Instruments.

1871. Declaration of Incorporation under Building Societies' Act (Consol. Stat. U. C., c. 53) filed with the Clerk of the Peace for the County of Wentworth, 6th June, 1871.

1885. Special Act, 48-9 V. c. 30 (D), confirming Provincial incorporation, limiting share capital and the amount to be borrowed by way of deposits, debentures, etc.

1893. Special Act, 56 V. c. 85 (D), limiting total liabilities of Society (Sec. 2), and extending its operations (sec. 3.)

1895. Special Act, 58-9 V. c. 85 (D), repealed sec. 6 of 56 V. c. 85 (D), and provided for the registration and cancellation of debenture stock.

Annual Statement

Of the condition and affairs of The Hamilton Provident and Loan Society of Hamilton, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 46 King Street East, in the City of Hamilton, in the Province of Ontario.

The Board is constituted of eight directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Current term of office.	
			Began (date).	Will end (date).
George H. Gillespie.....	President	Hamilton	All elected at yearly meeting, first Monday of March each year.	
A. T. Wood, M.P.....	Vice-President ...	"		
Alexander Turner	Director.....	"		
Walter R. Macdonald...	Director.....	"		
T. H. Macpherson, M.P	Director.....	"		
W. H. Glassco	Director.....	"		
Wm. Gibson, M.P.....	Director.....	Beamsville		
George Rutherford.....	Secretary	Hamilton		
C. Ferrie	Manager	"		

A. Permanent capital stock: total amount subscribed, $1,500,000; total amount paid up $1,100,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value or shares	—		
		$ c.	$ c.	$ c.	$ c.
1. Fully called and paid	10,000	100 00	1,000,000 00	1,000,000 00	
2. Partly called, 20 per cent. paid	5,000	100 00	500,000 00	100,000 00	
Totals	15,000	100 00	1,500,000 00	1,100,000 00	.....

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

DR. *Capital and Liabilities.*

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: total called, $1,000,000, total paid thereon	1,000,000 00	
2. (*b*) Ordinary joint stock capital, 20 per cent. called: total called, $100,000, total paid thereon	100,000 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid.	33,000 00	
6. (*f*) Reserve Fund in respect of (1), (2) or (3)	300,000 00	
7. (*g*) Contingent Fund in respect of (1), (2) or (3)	47,398 21	
		1,480,398 21
LIABILITIES TO THE PUBLIC.		
27. Deposits	780,702 22	
28. Interest on deposits, due, or accrued or capitalized in 1897	24,306 97	
29. Debentures issued in Canada	252,437 87	
30. Interest due and accrued on (29)	5,367 44	
31. Debentures issued elsewhere than in Canada	699,680 41	
32. Interest due and accrued on (31)	5,665 14	
35. Debenture stock issued elsewhere than in Canada	427,049 99	
36. Interest due and accrued on (35)	2,847 00	
39. Due on loans in process of completion or to pay assumed mortgages.	12,596 66	
		2,210,653 70
Total actual liabilities	.....	3,691,051 91

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :		
2. (i) At Hamilton, Ont., held in freehold	89,000 00	
3. (ii) At Brandon, Man., held in freehold	7,526 00	
5. (*b*) Freehold land (including buildings) other than foregoing	7,500 00	104,026 00
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land 10. (*b*) Debts secured by mortgaged land held for sale	3,282,537 36	3,282,537 36
C.—*Debts not above Enumerated for which the Corporation Holds Securities as follows :*		
14. (*b*) Debts secured by municipal bonds or debentures	81,918 82	
15. (*c*) Debts secured by public school debentures	2,505 70	
20. (*h*) Debts secured only by permanent stock or shares of the Corporation	2,253 50	86,678 02
E.—*Cash.*		
31. (*a*) On hand	5,010 37	
32. (*b*) In banks	212,800 16	217,810 53
Total of assets owned beneficially by Corporation		3,691,051 91

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)
	I.—Received by the Corporation for its own use.	$ c.
	A.—*Balances from 31st December, 1896.*	
	(*b*) Cash (not already shown under (1) :	
2.	(i) On hand	3,942 26
	C.—*Receipts on Account of Investments, Loans or Debts.*	
	(*a*) On Mortgages of Realty :	
10.	(i) Principal	547,720 73
11.	(ii) Interest	178,871 00
	(*b*) On debentures :	
12.	(i) Principal	11,704 64
13.	(ii) Interest	2,837 05
	(*c*) Unsecured debts :	
15.	(ii) Interest received from banks	7,002 03
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*	
17.	(*b*) Rent	3,104 46
	F.—*Borrowed Money.*	
26.	(*b*) Borrowed by taking deposits	466,536 26
27.	(*c*) Borrowed on debentures	70,643 32
29.	(*e*) Borrowed otherwise, viz.: Amount withdrawn from banks	1,045,083 27
	G.—*Receipts from other Sources, viz.:*	
30.	(*a*) Surplus on property sold	991 73
	(*b*) Debenture expenses	608 32
	(*c*) Exchange	79 16
	(*d*) Inspection of land	1,040 09
	(*e*) Sundry accounts	84,059 32
	Totals	2,424,223 64

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)
	I.—Expended on Corporation Account.	$ c.
	A.—*Sums Loaned or invested on Capital Account.*	
1.	(*a*) Loaned on Mortgages of Realty	450,683 90
	(*b*) Loaned or invested in other securities, viz.:	
2.	(i) Debentures	10,662 41
	B.—*Expended on Stock Account.*	
8.	Dividends paid on permanent stock. (*Extend into column 1*)	66,000 00
	C.—*Borrowed Money (other than foregoing) or interest thereon Paid, viz.:*	
19.	(*b*) Deposits: Principal, $507,838.81; interest, $1,271.78	509,110 59
20.	(*c*) Debentures issued in Canada: Principal, $35,950; interest, $10,213.04	46,163 04
21.	(*d*) Debentures issued elsewhere: Principal, $42,096.64; interest, $28,171.38	70,268 02
22.	(*e*) Debenture stock issued in Canada: Principal, *nil*; interest, *nil*.	
23.	(*f*) Debenture stock issued elsewhere: Principal, *nil*; interest, $17,082	17,082 00
24.	(*g*) General interest	507 05
	D.—*Management Expenses (other than foregoing).*	
25.	(*a*) Salaries and fees, $7,833.95; director's fees, $3,000	10,833 95
26.	(*b*) Commission	2,667 19
27.	(*c*) Exchange	108 33
28.	(*d*) Stationery, postage, printing and advertising	840 00
29.	(*e*) Law costs	331 79
30.	(*f*) Personal property tax	1,005 00
31.	(*g*) Travelling expenses and inspection of land	4,642 88
	E.—*Other Expenditure, viz.:*	
33.	(*a*) Manitoba Branch expenses	4,512 52
34.	(*b*) Sundry accounts	89,180 72
35.	(*c*) Debenture expenses	1,190 25
36.	(*d*) Loss on property sold	9,175 87
	F.—*Balance.*	
37.	(*a*) Cash on hand	5,010 37
	(*b*) Cash in various banks as follows:	
38.	(i) Deposited in banks during the year	1,124,247 76
	Totals	2,424,223 64

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures of the Corporation in Canada which will mature in 1898, currency debentures	72,426 27
2. Amount of debentures of the Corporation elsewhere which will mature in 1898, sterling debentures	278,373 33
3. Amount of other existing obligations of the Corporation which will mature in 1898, none.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898, about	206,295 25
5. Average rate of interest per annum paid by the Corporation during 1897, on deposits, 3.20%; on debentures, 3.93%; on debenture stock, 4%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty and on other securities, 5.96%.	
7. Of the mortgages held by the Corporation $2,809,907.56 is on realty situate in Ontario, and $472,629.80 is on realty situate elsewhere	3,282,537 36
8. Loss on property sold and provision for probable shrinkage in value of securities	15,586 14
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken in 1897—number, 35; amount	71,163 20
10. Aggregate market value of the land mortgaged to the Corporation	7,330,965 00
11. How often are the securities held by the Corporation valued? Yearly or oftener.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? All from $5,000 down.	
13. When were the accounts of the Corporation last audited? December 31st, 1897, audited monthly.	
14. Names and address of the auditors respectively for 1897. W. F. Findly, F.C.A., Maitland Young, Hamilton.	

THE HASTINGS LOAN AND INVESTMENT SOCIETY.

Head Office, Belleville, Ontario.

Incorporated under the Building Societies' Act (Consol. Stat. U. C., c. 53), by declaration filed with the Clerk of the Peace for the County of Hastings, 14th January, 1876.

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Hastings Loan and Investment Society of Belleville, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at Bridge street, in the City of Belleville, in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Sir Mackenzie Bowell.....	President	Belleville, Ont	January, 1876	3rd December, 1898.
Rev'd Amos Campbell	Vice-President ..	"	" 1883	"
John Bell, Q.C	Director.....	"	" 1886	"
John McMullen	Director.....	"	" 1876	"
J. L. Biggar.....	Director	"	" 1893	"
Stephen Burrows	Director.....	"	" 1895	"
W. P. Hudson.....	Director.....	"	November, 1897....	"
J. P. C. Phillips..	Manager	"	December, 1878....	

A. Permanent capital stock: total amount authorized, $250,000; total amount subscribed, $225,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a)—Fixed and permanent capital stock created by virtue of Building Society Acts.—

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. shares.	Par value.	—		
		$	$ c.	$ c.	$ c.
1. Fully paid	4,500	50 00	225,000	219,149.44	5,850 56
Prepaid					
Totals					

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

—	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
A.—*Permanent Capital Stock or Shares.*		
Item No.		
1. (*a*) Ordinary joint stock capital fully called; total called $225,000; total paid thereon	219,149 44	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	6,571 22	
6. (*f*) Reserve Fund in respect of (1), (2) or (3)	21,000 00	
7. (*g*) Contingent Fund in respect of (1), (2) or (3)	3,266 98	
		249,987 64
LIABILITIES TO THE PUBLIC.		
27. Deposits	113,590 51	
28. Interest on deposits, due, or accrued or capitalized	3,928 05	
29. Debentures issued in Canada	35,000 00	
31. Debentures issued elsewhere than in Canada, £10,000 sterling	48,666 67	
		201,185 23
Total actual liabilities		451,172 87

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$
I.—Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land.....	363,553 68	
10. (*b*) Debts secured by mortgaged land held for sale	76,616 12	440,169 80
C.—*Debts not above enumerated for which the Corporation holds Securities as follows:*		
20. (*h*) Debts secured only by permanent stock or shares of the Corporation.....	*50 00	50 00
E.—*Cash.*		
31. (*a*) On hand.....	747 94	
32. (*b*) In bank.....	9,130 83	9,878 77
F. *Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture and safe.....	.....	1,074 30
Total of assets owned beneficially by Corporation	.....	451,172 87

* Since paid.

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.			Total. (Column 4.
			$ c.
	I.—Received by the Corporation for its own use.		
	A.—*Balances from 31st December, 1896.*		
1.	(*b*) Cash (not already shown under (1).		
2.	(i) On hand		328 63
3	(ii) In bank	$7,278 75 Less 16 00	7,262 75
	B.—*Sums received Wholly or Partly on Capital Stock.*		
8.	(*c*) Dues on Instalment Building Society Stock		525 00
	C.—*Receipts on account of Investments, Loans or Debts.*		
	(*a*) On Mortgages of Realty :—		
10.	(i) Principal		42,565 12
11.	(ii) Interest		26 022 03
	(*b*) On other Securities :—		
12	(i) Loans on Stock		50 00
	F.—*Borrowed Money.*		
26.	(*b*) Borrowed by taking deposits		89,989 32
	Totals		6,742 85

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.
Item No. A.—*Sums Loaned or Invested on Capital Account.*	
1. (*a*) Loaned on Mortgages of Realty	26,308 68
7. (*d*) Incumbrances on realty paid off	4,123 62
B.—*Expended on Stock Account.*	
8. Dividends paid on permanent stock. (*Extend into Column 1*)	13,121 29
C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*	
19. (*b*) Deposits: Principal, $102,056.54; interest, $3,928.05	105,984 59
20. (*c*) Debentures issued in Canada: Principal ; interest, $1,575.00	4,008 32
21. (*d*) Debentures issued elsewhere: Principal ; interest, $2,433.32	
22. (*e*) Revenue entry charged to interest and credited to principal	288 04
23. (*f*) Interest on overdrawn bank account	76 00
D.—*Management Expenses (other than foregoing.)*	
25. (*a*) Salaries and fees	2,096 00
26. (*b*) Commission or brokerage	88 00
28. (*d*) Stationery, postage, printing and advertising	180 56
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	303 25
32. (*h*) Insurances or taxes advanced on property mortgaged to the corporation. Included in 1 (*a*).	
E.—*Other Expenditures, viz.:*	
33. (*a*) Municipal tax	270 73
34. (*b*) Insurance on safe, etc.	15 00
F.—*Balance.*	
37. (*a*) Cash on hand	747 44
(*b*) Cash in bank	9,130 83
Totals	166,742 85

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898. None.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3½ %; on debentures, 4¾ %.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6½ %; on other securities, 7 %.	
7. Of the mortgages held by the Corporation, $440,169.80 is on realty situate in Ontario, and none on realty situate elsewhere	440,169 80
8. Loans written off or transferred to real estate account during 1897	4,132 62
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No. 3; amount	10,400 00
10. Aggregate market value of the land mortgaged to the Corporation, impossible to calculate; original valuation	807,218 00
11. How often are the securities held by the Corporation valued? A special valuation was made about three years ago.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? The Manager, $20,000.00	
13. When were the accounts of the Corporation last audited? 31st December, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed): Herbert Greaves, R. T. Mussen. For 1898, Herbert Greaves, B. H. Joy.	

THE HOME SAVINGS AND LOAN COMPANY, LIMITED.

Head Office, Toronto, Ontario.

Constating Instruments.

1877, April 25. Incorporated by Letters Patent under the Ontario Joint Stock Companies Letters Patent Act (R. S. O. 1877, c. 150). Lib. 5, No. 35.

1879. 42 V. c. 55 (D.) empowered the Company to acquire the property and assets of the Toronto Savings Bank.

For the lending and the borrowing powers see the Letters Patent above cited, and the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of The Home Savings and Loan Company, Limited, of Toronto, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 78 Church street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of five directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Hon. Sir Frank Smith ...	President	Toronto	February, 1897	February, 1898 ....
Eugene O'Keefe	Vice-President...	"	"	" ....
Wm. T. Kiely	Director	"	"	" ....
John Foy	Director	"	"	" ....
Edward Stock	Director	" (Mimico)	"	" ....
James Mason.....	Manager ..... / Secretary	"	28th December, 1878	.....

A. Permanent capital stock: total amount authorized, $2,000,000; total amount subscribed, $2,000,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(b).—Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or Private Acts.

Only one call made 10 per cent. Stock allotted at different times, last allotment 5th February, 1894.

Description.	No. of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		$ c.	$ c.	$ c.
1. Fully called				
2. 10 per cent. called	20,000	2,000,000 00	200,000 00	Nil.
Totals				

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. *Permanent Capital Stock or Shares.*		
2. (*b*) Ordinary joint stock capital, 10 per cent. called: total called $200,000; total paid thereon	200,000 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	7,000 00	
5. (*e*) Unappropriated profits in respect (1), (2) or (3)	1,682 21	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	200,000 00	
7. (*g*) Contingent fund in respect of (1), (2) or (3)	30,000 00	
		438,682 21
LIABILITIES TO THE PUBLIC.		
27. Deposits	1,900,138 23	
28. Interest on deposits, due, or accrued or capitalized	59,318 30	
39. Due on loans in process of completion or to pay assumed mortgages	3,280 04	
40. Other liabilities to the public, viz.:		
41. (*a*) Directors' compensation	2,500 00	
		1,965,236 57
Total actual liabilities		2,403,918 78

Balance Sheet as at 31st December, 1897.

Cr

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—Immovable Property Owned Beneficially by Corporation.		
1. (*a*) Office premises situate as follows :		
2. (i) At Toronto, held in freehold	27,000 00	
5. (*b*) Freehold land (including buildings) other than foregoing	4,399 99	31,399 90
B.—Debts secured by Mortgages of Land.		
9. (*a*) Debts (other than item 10) secured by mortgages of land	904,854 59	
10. (*b*) Debts secured by mortgaged land held for sale	28,911 17	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	18,947 68	952,713 44
12. (*d*) Of the debts mentioned in items 9 and 11 the sum of $24,019.92 is due by directors or officers of the Corporation. (Not extended) $24,019.92.		
C.—Debts not above enumerated for which the Corporation holds securities as follows :		
20. (*h*) Debts secured only by permanent stock or shares of the Corporation. Principal	14,885 92	
22. (*j*) Debts secured on the collateral security of stocks, bonds and debentures other than above. Principal	1,059,417 66	
25. (*m*) One-third interest in lands	28,872 33	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	1,648 94	1,104,824 85
D.—Unsecured Debts.		
27. (*a*) Sundry accounts	976 77	976 77
E.—Cash.		
31. (*a*) On hand	2,904 57	
32. (*b*) In banks at Toronto	207,249 16	210,153 73
F.—Assets not hereinbefore mentioned.		
37. (*a*) Office furniture	1,600 00	
38. (*b*) Debentures of the Niagara Navigation Co. (Limited)	102,250 00	103,850 00
Total of assets owned beneficially by Corporation		2,403,918 78

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1).	Total. (Column 4).
	I.—Received by the Corporation for its own use.	$ c.	$ c.
	A.—*Balances from 31st December, 1896.*		
	(*b*) Cash (not already shown under (1)).		
2.	(i) On hand	2,122 72	
3.	(ii) In bank	137,847 49	139,970 21
	C.—*Receipts on account of Investments, Loans or Debts.*		
	(*a*) On Mortgages of Realty:		
10.	(i) Principal	42,636 17	
11.	(ii) Interest	45,426 74	88,062 91
	(*b*) On other securities:		
12.	(i) Principal	2,162,772 73	
13.	(ii) Interest or Dividends	70,011 78	2,232,784 51
	D.—*Receipts from Real Estate owned Beneficially by Corporation.*		
17.	(*b*) Rents		709 35
	F.—*Borrowed Money.*		
26.	(*b*) Borrowed by taking deposits		2,271,549 89
	G.—*Receipts from other sources, viz:*		
30.	(*a*) Insurance Premiums and Solicitors' charges refunded by mortgagors		1,452 27
	Totals		4,734,529 14

Cash Account.

Expenditure for the year ending 31st December, 1897.

		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I.—Expended on Corporation Account.	$ c.	$ c.
	A.—*Sums Loaned or Invested on Capital Account.*		
Item No. 1.	(*a*) Loaned on Mortgages of Realty		157,430 91
	(*b*) Loaned or invested in other securities, viz.:—		
2.	(i) On the collateral security of stocks, bonds and debentures.		1,980,053 38
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock. (Extend into column 1)	14,000 00	14,000 00
	C.—*Borrowed Money (other than foregoing) or Interest thereon Paid, viz.:*		
19.	(*b*) Deposits: Principal, $2,351,466.93; interest, $2,321.02		2,353,787 95
	D.—*Management Expenses (other than foregoing).*		
25.	(*a*) Salaries and fees	15,325 00	
28	(*d*) Stationery, postage, printing and advertising	1,234 52	
29.	(*e*) Law costs	135 90	
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates	2,347 75	19,103 17
	F.—*Balance.*		
37.	(*a*) Cash on hand $ 2,904 57		
	(*b*) Cash in banks 207,249 16		210,153 73
	Totals		4,734,529 14

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER 1897.

	$ c.
3. Amount of other existing obligations of the Corporation which will mature in 1898. Deposits which are all subject to notice.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898.. Mortgages, $44,095, and all collateral loans.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits. 3½%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, about 5¼%; on other securities, about 4½%.	
7. Of the mortgages held by the Corporation all are on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897	3,714 01
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No. 1; amount	300 00
10. Aggregate market value of the land mortgaged to the Corporation	1,987,520 00
11. How often are the securities held by the Corporation valued? Mortgages when occasion requires, other loans continuously.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? All under bond, manager, $8,000; accountant, $4,000; teller, $5,000; two ledger keepers, each $4,000; two clerks, each $3,000; two clerks, each $1,000.	
13. When were the accounts of the Corporation last audited? Audited daily and completed at end of year.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). John M. Sullivan and John G. Hall, Toronto.	

THE HURON AND BRUCE LOAN AND INVESTMENT COMPANY.

Head Office, Goderich, Ontario.

Incorporated under the Building Societies Act (R. S. O. 1877, c. 164), by declaration filed with the Clerk of the Peace for the County of Huron, 27th January, 1885.

The lending and borrowing powers are governed by the Loan Corporations Act, R. S. O., 1897, c. 205.

Annual Statement

Of the condition and affairs of the Huron and Bruce Loan and Investment Company of Goderich, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is on North street, in the Town of Goderich, in the Province of Ontario.

The Board is constituted of ten directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Francis Jordan	President	Goderich	February, 1897	February, 1898.
Samuel Sloane	Vice-President	"	"	"
M. C. Cameron	Director	"	"	"
J. M. Roberts	Director	Dungannon	"	"
H. C. Dunlop	Director	Goderich	"	"
Sir D. A. Smith	Director	London, Eng	"	"
Sir R. J. Cartwright	Director	Ottawa	"	"
A. McD. Allan	Director	Goderich	"	"
C. A. Nairn	Director	"	"	"
J. H. Colborne	Director	"	"	"
Horace Horton	Manager / Secretary	"		

A. Permanent capital stock: total amount authorized, $500,000; total amount subscribed, $218,600, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*a*) —*Fixed and permanent capital stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	——		
		$	$ c.	$ c.	$ c.
1. Fully called	2,854	50	142,700 00	142,700 00	.....
2. Partly called	1,518	50	75,900 00	37,673 65	38,226 35
Totals	4,372	.....	218,600 00	180,373 65	38,226 35

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

——	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
A. *Permanent Capital Stock or Shares.*		
Item No.		
1. (*a*) Ordinary joint stock capital fully called: Total called, no formal call has ever been made; total paid thereon	180,373 65	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	4,509 20	
12. (*l*) Contingent fund	3,979 64	
		188,862 49
LIABILITIES TO THE PUBLIC.		
27. Deposits	72,463 20	
28. Interest on deposits, due, or accrued or capitalized	1,510 10	
		73,973 30
Total actual liabilities		262,835 79

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgage of land	241,975 03	
10. (*b*) Debts secured by mortgaged land held for sale	13,401 65	255,376 68
E.—*Cash.*		
31. (*a*) On hand	772 04	
32. (*b*) In bank	6,043 22	6,815 26
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture		643 85
Total of assets owned beneficially by Corporation		262,835 79

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1).
		$ c.
	I.—Received by the Corporation for its own use.	
	A.—*Balances from 31st December, 1896.*	
1.	(*b*) Cash (not already shown under (1)).	
2.	(i) On hand	1,446 22
3.	(ii) In bank	4,134 28
	B.—*Sums Received Wholly or Partly on Capital Stock.*	
4.	(*a*) Calls on Joint Stock Permanent Capital	20 65
	C.—*Receipts on Account of Investments, Loans or Debts.*	
	(*a*) On Mortgages of Realty :—	
10.	(i) Principal	22,629 70
11.	(ii) Interest	14,074 63
	(*b*) On other Securities :—	
12.	(i) Principal	1,907 50
13.	(ii) Interest or Dividends	209 77
	(*c*) Unsecured Debts :—	
15.	(ii) Interest	41 52
	F.—*Borrowed Money.*	
26.	(*b*) Borrowed by taking deposits	75,352 56
	Totals	119,816 83

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	$ c.	$ c.
I.—Expended on Corporation Account.		
A.—*Sums Loaned or Invested on Capital Account.*		
Item No. 1. (*a*) Loaned on Mortgages of Realty		13,078 96
7. (*d*) Incumbrances on realty paid off		51 50
B.—*Expended on Stock Account.*		
8. Dividends paid on permanent stock. (*Extended into Column 1*)	9,017 75	9,017 75
C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*		
18. (*a*) Bank account (principal and interest)		4,029 10
19. (*b*) Deposits: principal, $85,330.12; interest, $4,785		85,377 97
D.—*Management Expenses (other than foregoing).*		
25. (*a*) Salaries and fees	1,050 00	
28. (*d*) Stationery, postage, printing and advertising	77 20	
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	304 59	
31. (*g*) Travelling expenses	14 50	1,446 29
F.—*Balance.*		
37. (*a*) Cash on hand	772 04	
(*b*) Cash in bank	6,043 22	6,815 26
Totals		119,816 83

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5¾%.	
7. Of the mortgages held by the Corporation $241,975.03 is on realty situate in Ontario, and none on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897.	4,000 00
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No. 1; amount....	2,738 00
10. Aggregate market value of the land mortgaged to the Corporation, ...	320,500
11. How often are the securities held by the Corporation valued? *No answer.*	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Manager (who is also Secy.-Treasurer)	30,000 00
13. When were the accounts of the Corporation last audited? 31st December, 1897.	
14. Names and address of the auditors respectively for 1897? W. R. Robertson and H. W. Ball.	

THE HURON AND ERIE LOAN AND SAVINGS COMPANY.

Head Office, London, Ontario.

Constating Instruments.

1864. Declaration of incorporation under the Building Societies Act (Consol. Stat. U. C., c. 53) filed with the Clerk of the Peace for the County of Middlesex, 16th March, 1864. The original corporate name was The Huron and Erie Savings and Loan Society.

1876. The corporate name was changed to The Huron and Erie Loan and Savings Company by the Act of Ontario, 39 Vic. c. 95.

1896. The Dominion Act, 59 V. c. 49, limited the borrowing powers; regulated the issue, transfer and registration of debentures; prohibited loans upon stock or to directors, etc.

Annual Statement

Of the condition and affairs of the Huron and Erie Loan and Savings Company of London, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 442 Richmond street, in the City of London, in the Province of Ontario.

The Board is constituted of six directors, holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Name of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
John W. Little	President	London, Ont ..	February, 1898	February, 1899.
Philip Mackenzie	Vice-President ...	" ..	"	"
Prof. Wm. Saunders....	Director.....	Ottawa, Ont...	"	"
F. E. Leonard	Director.....	London, Ont...	"	"
N. Cronyn	Director	" ..	"	"
John Labatt	Director.....	" ..	"	"
Geo. A. Somerville ...	Manager ..... / Secretary	London.		

A. Permanent capital stock: Total amount authorized, $3,000,000; total amount subscribed, $3,000,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value.	—		
		$	$ c.	$ c.	$ c.
1. Fully paid	20,000	50	1,000,000 00	1,000,000 00	.....
2. 20%	40,000	50	2,000,000 00	400,000 00	1,600,000 00
Totals	60,000	.....	3,000,000 00	1,400,000 00	1,600,000 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not Printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

—	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS.)		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: Total called, $1,000,000; total paid thereon	1,000,000 00	
2. (*b*) Ordinary joint stock capital, 20% called: Total called, $400,000; total paid thereon	400,000 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	63,060 03	
5. (*e*) Unappropriated profits in respect of (1), (2) or (3)	17,427 94	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	750,000 00	
		2,230,487 97
LIABILITIES TO THE PUBLIC.		
27. Deposits	1,363,634 14	
28. Interest on deposits, capitalized during the year, $46,316.64		
29. Debentures issued and payable in Canada	1,418,846 60	
30. Interest due and accrued on (29)	24,622 65	
31. Debentures payable elsewhere than in Canada	1,450,646 24	
32. Interest due and accrued on (31)	8,955 52	
39. Due on loans in process of completion or to pay assumed mortgages	22,750 84	
		4,289,455 99
Total actual liabilities		6,519,943 96

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

—	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
A —*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows:—		
2. (i) At 442 Richmond street, London, Ont., held in freehold	20,000 00	
5. (*b*) Freehold land (including buildings) other than foregoing, held under deed	13,391 00	33,391 00
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land..... ..	5,919,840 00	
10. (*b*) Debts secured by mortgaged land held for sale	6,959 00	5,926,799 00
C.—*Debts not above enumerated for which the Corporation holds securities as follows:*		
14. (*b*) Debts secured by municipal bonds or debentures.....	31,284 00	
16. (*d*) Debts secured by Loan Corporations' debentures	75,583 00	
17. (*e*) Debts secured by Dominion Government stock or bonds..... ..	60,810 00	167,677 00
E.—*Cash.*		
31. (*a*) On hand	3,671 43	
32. (*b*) In bank as follows:—		
33. (i) In Canada.....	333,077 49	
34. (ii) In England	55,328 04	392,076 96
Total of assets owned beneficially by Corporation	.....	6,519,943 96

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.	—	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I.—Received by the Corporation for its own use.	$ c.	$ c.
	A.—*Balances from 31st December, 1896.*		
	(*b*) Cash (not already shown under (1)) :—		
2.	(i) On hand	2,751 58	
3.	(ii) In bank	137,545 16	140,296 74
	C.—*Receipts on account of investments, loans or debts.*		
	(*a*) On Mortgages of Realty :—		
10.	(i) Principal	900,607 68	
11.	(ii) Interest		
	(*b*) On other securities :—		
12.	(i) Principal	26,712 03	
13.	(ii) Interest or dividends	10,158 55	937,478 26
	D.—*Receipts from real estate owned beneficially by Corporation.*		
17.	(*b*) Rents		521 00
	F.—*Borrowed Money.*		
26.	(*b*) Borrowed by taking deposits	1,680,426 41	
27.	(*c*) Borrowed on debentures	892,267 21	2,572,693 62
	G.—*Receipts from other sources, viz.* :		
30.	(*a*) Profit on sale of sterling exchange	372 38	
	(*b*) Interest on bank account	6,003 74	6,376 12
	Totals		3,657,365 74

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I.—Expended on Corporation Account.		
	A.—*Sums Loaned or Invested on Capital Account.*	$ c.	$ c.
1.	(*a*) Loaned on Mortgages of Realty, not including renewals	444,463 89	444,463 89
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock. (*Extend into Column 1*)	126,006 30	12,006 30
	C.—*Borrowed money (other than foregoing) or interest thereon paid, viz.:*		
18.	(*a*) Bank Account (Principal and Interest).		
19.	(*b*) Deposits: Principal, $1,645,950.95: Interest, $1,357.18 (not including amount capitalized)	1,647,308 13	
20.	(*c*) Debentures issued and payable in Canada: Principal, $390,920.69; Interest, $57,163.20	448,085 89	
21.	(*d*) Debentures payable elsewhere: Principal, $504,376.46: Interest, 57,892.39	562,268 85	2,657,662 87
	D.—*Management Expenses (other than foregoing).*		
25.	(*a*) Salaries and Fees	19,287 00	
26.	(*b*) Commission or Brokerage	8,509 18	
28.	(*d*) Stationery, postage, printing and advertising	2,300 42	
29.	(*e*) Law costs	512 10	
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates	3,725 50	
31.	(*g*) Travelling expenses	2,177 68	36,511 88
32.	(*h*) Insurances or taxes advanced on property mortgaged to the corporation charged directly to mortgagee and included in No. 1(*a*).		
	E.—*Other Expenditure, viz.:*		
33.	(*a*) Sundry repairs, etc		643 84
	E.—*Balance.*		
37.	(*a*) Cash on hand	3,671 43	
	(*b*) Cash in various banks as follows:		
38.	(i) In Canada	33,077 49	
39.	(ii) In England	55,328 04	392,076 96
	Totals		3,657,365 74

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of Debentures issued by the Corporation in Canada which will mature in 1898	490,996 56
2. Amount of Debentures issued by the Corporation elsewhere which will mature in 1898.	180,431 66
3. Amount of other existing obligations of the Corporation which will mature in 1898 (exclusive of deposits). None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898, including loans payable on demand.....	1,264,782 00
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3.5 % ; on debentures, 3.92 % ; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5.85 % ; on other securities, 4.26%.	
7. Of the mortgages held by the Corporation, $5,919,840.00 is on realty situate in Ontario, and nothing on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897.....	63,601 90
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897. No., 39. Amount, $91,157.00.	
10. Aggregate market value of the land mortgaged to the Corporation, $10,597,762,00.	
11. How often are the securities held by the Corporation valued? Annually.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager, $10,000, and ten other officers at $29,000 ; $39.000 in all.	
13. When were the accounts of the Corporation last audited ? As at 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed) : For 1897-98, Geo. F. Jewell, F. C. A , London, and Thomas A. Brown, London.	

THE HURON AND LAMBTON LOAN AND SAVINGS COMPANY.

Head Office, Sarnia.

Incorporated under the Building Societies Act, R.S.O. 1877, c. 164, by Declara ion filed with the Clerk of the Peace for the County of Lambton, 1st November, 1877.

The lending and the borrowing powers are governed by the Loan Corporations Act, R.S.O. 1897, c. 205.

Annual Statement

Of the conditions and affairs of the Huron and Lambton Loan and Savings Company of Sarnia, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is on Front street, in the Town of Sarnia, in the Province of Ontario.

The Board is constituted of eleven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Current term of office.	
			Began (date).	Will end (date).
James Flintoft	President	Sarnia	February, 1897.	1st Feb'ry, 1898.
John A. MacKenzie	Vice-President	"	"	"
Frank Ward	Director	Wyoming	"	"
Peter Taylor	Director	Sarnia	"	"
Reuben Proctor	Director	"	"	"
Joseph Kaupp	Director	"	"	"
Arch'd Dewar	Director	Petrolea	"	"
Geo. Druitt	Director	Sarnia	"	"
Manfred B. Proctor	Director	"	"	"
John J. Clydesdale	Director	Corunna	"	"
J. Cameron Douglas	Secretary / Treasurer	Sarnia	"	

A. Permanent capital stock: total amount authorized, $1,000,000; total amount subscribed, $399,200, as more particularly set out in Schedule A hereto.

SCHEDULE A.

Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	No. of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		$ c.	$ c.	
1. Fully paid	6,159	307,950 00	307,950 00	
2. Per cent. called	863		12,602 28	
3. 20 per cent. called	962		9,620 00	
Totals	7,984	307,950 00	330,172 28	

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities

Dr.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: Total called, $307,950; total paid thereon	307,950 00	
2. (*b*) Ordinary joint stock capital 20% called: Total called, $9,620; total paid thereon	9,620 00	
3. (*c*) Ordinary joint stock capital % called: Total called, $12,602.28; total paid thereon	12,602 28	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	48,000 00	
7. (*g*) Contingent fund in respect of (1), (2) or (3)	2,728 53	
		380,900 81
LIABILITIES TO THE PUBLIC.		
27. Deposits	307,962 13	
28. Interest on deposits due or accrued or capitalized	9,014 61	
29. Debentures issued in Canada	25,050 00	
30. Interest due and accrued on (29)	416 06	
		342,442 80
Total actual liabilities		723,343 61

Balance Sheet as at 31st December, 1897.

Cr.

		$ c.	$ c.
	I.—Assets of which the Corporation is the Beneficial Owner.		
	A.—Immovable Property Owned Beneficially by Corporation.		
1.	(*a*) Office premises situate as follows:		
2.	(i) At Sarnia, Ont., held in freehold	7,500 00	
7.	(*d*) Office furniture	125 00	7,625 00
	B.—Debts Secured by Mortgages of Land.		
9.	(*a*) Debts (other than item 10) secured by mortgages of land	535,875 33	
10.	(*b*) Debts secured by mortgaged land held for sale	14,445 03	550,320 36
	C.—Debts not above enumerated for which the Corporation holds Securities as follows:		
14.	(*b*) Debts secured by municipal bonds or debentures	37,605 64	
20.	(*h*) Debts secured only by permanent stock or shares of the Corporation, reduced since 1896 by $10,698	35,336 20	72,941 84
	E.—Cash.		
31.	(*a*) On hand	1,346 26	
32.	(*b*) In bank	91,110 15	92,456 41
	Totals		723,343 61

Cash Account.

Receipts for the year ending, 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)
		$ c.
	I.—Received by the Corporation for its own use.	
	A.—*Balances from 31st December, 1896.*	
	(*b*) Cash (not already shown under (1)) :	
2.	(i) On hand	7,220 28
	B.—*Sums Received Wholly or Partly on Capital Stock.*	
4.	(*a*) Calls on joint stock permanent capital	255 82
	C.—*Receipts on Account of Investments, Loans or Debts.*	
	(*a*) Mortgages of Realty :	
10.	(i) Principal	131,337 71
11.	(ii) Interest	
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*	
17.	(*b*) Rent	200 00
	F.—*Borrowed Money.*	
26.	(*b*) Borrowed by taking deposits	396,646 83
27.	(*c*) Borrowed on debentures	10,100 00
	G.—*Receipts from other Sources, viz.* :	
30.	(*a*) General interest, bank deposits, etc	1,235 54
	Totals	546,996 18

Cash Account.

Expenditure for the year ending 31st December, 1897

		Amount carried to earnings, maintenance or contingent account. (Column 1).	Total. (Column 4).
	I.—Expended on Corporation Account.	$ c.	$ c.
	A.—*Sums Loaned or Invested on Capital Account.*		
Item No. 1.	(*a*) Loaned on Mortgages of Realty	91,546 50	91,546 50
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock (*Extend into Column 1*)	19,802 66	19,802 66
	C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.*		
18.	(*a*) Bank Account (Principal or Interest)	342 06	
19.	(*b*) Deposits: Principal, $325,006.69; Interest, $9,014.61	334,021 30	
20.	(*c*) Debentures issued in Canada: Principal, $3,890; Interest, $870.75.	4,760 75	339,124 11
	D.—*Management Expenses (other than foregoing).*		
25.	(*a*) Salaries and Directors and Auditor's Fees	2,864 00	
26.	(*b*) Commission or Brokerage	117 10	
28.	(*d*) Stationery, Postage, Printing and Advertising	169 37	
29.	(*e*) Law costs	49 50	
30.	(*f*) Fuel, Rent, Taxes (other than in 32) and rates	626 07	
31.	(*g*) Travelling Expenses	14 65	3,840 69
	E.—*Other Expenditures, viz.:*		
33.	(*a*) Provincial Government Registration Fee	105 00	
34.	(*b*) Telephone	27 50	
35.	(*c*) Insurance on office premises	38 32	
36.	(*d*) Sundries	54 99	225 81
	F.—*Balance.*		
37.	(*a*) Cash on hand	1,346 26	
	(*b*) Cash in bank	91,110 15	92,456 41
	Totals		546,996 18

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
1. Amount of Debentures issued by the Corporation in Canada which will mature in 1898.	3,000 00
2. Amount of Debentures issued by the Corporation elsewhere which will mature in 1898, none.	
3. Amount of other existing obligations of the Corporation which will mature in 1898, none.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3½ %; on debentures, 4.06 %.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5½ %; on other securities, 5½ %.	
7. Of the mortgages held by the Corporation, $491,806.62 is on realty situate in Ontario, and $44,068.71 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897.....	64 09
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897. No., 2; amount.....	1,906 00
11. How often are the securities held by the Corporation valued? Annually.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Manager, $8,000; Accountant, $2,000.	
13. When were the accounts of the Corporation last audited? Audited weekly.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). J. D. Stewart and H. Ingram, Sarnia.	

THE IMPERIAL LOAN AND INVESTMENT COMPANY OF CANADA (LIMITED.)

Head Office, Toronto. (38 Vic. c. 62 (D) s. 2.)

Constating Instruments

As recited in the preamble of 38 V. c. 62 (D) the Company was incorporated under the Building Societies Act, Consol. Stat. U. C. chap 53. The declaration of incorporation was filed on the 19th August, 1869, with the Clerk of the Peace for the county of York. The corporate name was The Imperial Building, Savings and Investment Company (Decl. Book II. 47).

In 1875 the corporate name was changed by 38 V. c. 62 (D) to The Imperial Loan and Investment Company (sec. 1). The existing Corporation was continued under the new name, with its head office at Toronto (sec. 2).

Section 3 enacts: "3. The said Company shall not under its new name be deemed a new corporation, but it shall have, hold and continue to exercise all the rights, powers and privileges that previously to such change had been held, exercised and enjoyed by the said 'Imperial Building, Savings and Investment Company' in as full and ample a manner as if the said Company had continued to exist under its original name; and all statutory provisions applicable to the said Company shall continue applicable to the said Imperial Loan and Investment Company."

In 1881, by Letters Patent of Canada, dated 11th June, the Company was reincorporated "under *The Canada Joint Stock Companies' Act, 1877*, by the name of the Imperial Loan and Investment Company of Canada (Limited), and as a loan company within the meaning and provisions of the said last mentioned Act, with their now existing capital of one million dollars."

For the lending and the borrowing powers see R. S. C. (1886) c. 119, secs. 88-98; and the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Imperial Loan and Investment Company of Canada, Limited, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 32-34 Adelaide street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office—From year to year.	
			Began (date).	Will end (date).
James Thorburn, M.D.	President	Toronto, Ont.	31st December.	31st December.
Sir Geo. A. Kirkpatrick	Vice-President.	"	"	"
Ald. Daniel Lamb	Director.	"	"	"
C. C. Dalton	Director.	"	"	"
R. Shaw Wood	Director.	London, Ont.	"	"
H. M. Pellatt	Director.	Toronto	"	"
E. H. Kertland	Manager	"	"	"

A.—Permanent capital stock : Total amount authorized, $1,000,000 ; total amount subscribed, $839,850, as more particularly set out in Schedule A hereto.

B.—*Fixed and Permanent Capital Stock created by virtue of Joint Stock Companies' Acts or Private Acts.*

Description.	No. of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		$	$ c.	$ c.	$ c.
1. Fully called . ..	6,298½	100	629,850 00	629,470 86	379 14
2. 40 per cent. called	2,100	100	210,000 00	*91,177 10	....
Totals	8,398½		839,850 00	720,647 96	....

* Certain shareholders have taken advantage of the Company's permission to pay in full.

List of Shareholders as at 31st December, 1897.
(Not printed.)

Balance Sheet as at 31st December, 1897.

Capital and Liabilities.

Dr.

	$ c.	$ c.
Capital (Liabilities to Stockholders or Shareholders).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called, total called, $629,850.00; total paid thereon	629,470 86	
2. (*b*) Ordinary Joint Stock Capital 40 % called : total called, $84,000 ; total paid thereon. See footnote.....	*91,177 10	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid..	21,513 20	
6. (*f*) Reserve Fund in respect of (1), (2) or (3).....	160,000 00	
7. (*g*) Contingent Fund in respect of (1), (2) or (3)	21,602 15	
		923,763 31
Liabilities to the Public.		
27. Deposits	31,654 55	
29. Debentures issued in Canada	185,750 00	
30. Interest due and accrued on (29).....	2,295 50	
31. Debentures issued elsewhere than in Canada	720,173 18	
32. Interest due and accrued on (31).....	7,752 10	
		947,625 33
Total actual liabilities.....	....	1,871,388 64

* 2,100 shares issued 40 % called, but permission given to pay in full, of which permission some have availed themselves.

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
A.—*Immovable Property owned Beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing	110,159 00	
6. (*c*) Leasehold land (including buildings) other than foregoing	15,780 00	125,939 00
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	1,565,025 82	
10. (*b*) Debts secured by mortgaged land held for sale	127,283 16	1,692,308 98
C.—*Debts not above Enumerated for which the Corporation Holds Securities as follows.*		
20. (*h*) Debts secured only by permanent stock or shares of the Corporation	50,129 05	50,129 05
D.—*Cash.*		
31. (*a*) On hand	265 49	
32. (*b*) In bank $20,067 37		
Less owing National Bank of Scotland, London, England 17,321 25	2,746 12	3,011 61
Total of assets owned beneficially by Corporation	1,871,388 64	1,871,388 64

CASH ACCOUNT.

Receipts for the year ending 31st December, 1897.

Item No.		Amount carried to capital account: Permanent capital, including reserve. (Column 3).	Total. (Column 4).
	I.—RECEIVED BY THE CORPORATION FOR ITS OWN USE.		
	A.—*Balance from 31st December, 1896.*		
1.	(*a*) Capital account	4,312 00	
	(*b*) Cash (not already shown under (1)) premium	95 40	4,407 40
2.	(i) On hand		274 61
3.	(ii) In bank		12,973 92
	C.—*Receipts on Account of Investments, Loans or Debts.*		
	(*a*) On Mortgages of Realty :—		
10.	(i) Principal		98,817 03
11.	(ii) Interest		108,882 27
	(*b*) On other securities :—		
12.	(i) Principal		17,653 15
13.	(ii) Interest or dividends		2,860 25
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*		
7.	(*b*) Rent		6,066 73
	F.—*Borrowed Money.*		
26.	(*b*) Borrowed by taking deposits		22,466 08
27.	(*c*) Borrowed on debentures		87,458 71
	Totals		361,860 15

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1)	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c.
Item No. A.—*Sums Loaned or Invested on Capital Account.*		
1. (*a*) Loaned on Mortgages of Realty		41,063 48
(*b*) Loaned or invested in other securities		4,382 30
B.—*Expended on Stock Account.*		
8. Dividends paid on permanent stock. (*Extend into column 1*)	42,989 90	42,989 90
C.—*Borrowed Money (other than foregoing) or Interest thereon Paid, viz.:*		
19 (*b*) Deposits: Principal, $22,293.19; interest, $1,070.32		23,363 51
20. (*c*) Debentures issued in Canada: Principal, $22,500; interest, $5,821.97.		28,321 97
21. (*d*) Debentures issued elsewhere: Principal, $165,899.98; interest, $33,694.16		199,594 14
D.—*Management Expenses (other than foregoing).*		
25. (*a*) Salaries and fees		11,458 00
26. (*b*) Commission on brokerage		4,725 59
28 (*d*) Stationery, postage, printing and advertising		398 63
29. (*e*) Law costs		200 00
31. (*g*) Travelling expenses		513 00
E.—*Other Expenditures, viz.:*		
33. (*a*) Tax on dividend		838 92
34. (*b*) Office rent		1,000 00
F.—*Balance.*		
37. (*a*) Cash on hand	265 49	
(*b*) Cash in bank	2,746 12	3,011 61
Totals		361,860 15

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	47,400 00
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898	198,073 32
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	325,679 00
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3 %; on debentures, 4 %.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5½ %; on other securities, 5%.	
7. Of the mortgages held by the Corporation, $939,809.95 is on realty situate in Ontario, and $878,438 03 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	13,531 32
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No. 14; amount	65,537 00
10. Aggregate market value of the land mortgaged to the Corporation	3,500,000 00
11. How often are the securities held by the Corporation valued? Annually.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Managing director, $5,000; accountant, $3,000; cashier, $1,000; clerk, $1,000.	
13. When were the accounts of the Corporation last audited? To 31st December, 1897.	
14. Names and addresses of the auditors for 1897: Robert Sewell and T. E. P. Trew.	

THE INDUSTRIAL MORTGAGE AND SAVINGS COMPANY.

Head Office, Sarnia.

Incorporated under the Building Societies Act, R. S. O. 1887, c. 169, by declaration filed with the Clerk of the Peace for the County of Lambton, 20th August, 1889.

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Industrial Mortgage and Savings Company of Sarnia, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is on Front street, in the Town of Sarnia, in the Province of Ontario.

The Board is constituted of eleven directors holding office for years.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Jas. F. Lister, M.P	President	Sarnia	At organization of Company	1899
Archd. Gibb	Vice-President	"	"	1898
Jas. C. Wood	2nd Vice-President	Langbank	"	1898
Thomas Howden	Director	Watford	"	1898
A. E. Harvey	Director	Wyoming	"	
Andrew Cairns	Director	Camlachie	"	
Thomas Symington	Director	Sarnia	"	1898
Archd. McIntyre	Director	Napier	"	1899
Peter Grant	Director	Avonroy	"	1899
James Purvis	Director	Sarnia	"	1898
S. A. Macvicar	Director		"	1899
J. S. Symington	Manager and Secy.			

A. Permanent capital stock: total amount authorized, $500,000; total amount subscribed, $335,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	——		
		$	$ c.	$ c.	$ c.
1. Fully paid	6,700	50	335,000 00	317,494 61	
2.					
Totals					

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

Item No.	——	$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	A.—*Permanent Capital Stock or Shares.*		
1.	(*c*) Ordinary joint stock capital fully called: Total called, $335,000; total paid thereon	317,494 61	
4.	(*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	9,493 25	
6.	(*f*) Reserve fund in respect of (1), (2) or (3)	45,211 56	
7.	(*g*) Contingent fund in respect of (1), (2) or (3)	1,000 00	373,199 42
	LIABILITIES TO THE PUBLIC		
27.	Deposits	345,183 48	
28.	Interest on deposits, due, or accrued or capitalized	9,814 98	
29	Debentures issued in Canada	109,175 47	
30	Interest due and accrued on (29)	1,670 59	465,844 52
	Total actual liabilities		839,043 94

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I. Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	759,398 60	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	1,046 71	760,445 31
C.—*Debts not above enumerated for which the Corporation holds Securities as follows:*		
14. (*b*) Debts secured by Municipal Bonds or Debentures	26,161 60	
20. (*h*) Debts secured only by permanent stock or shares of the Corporation	15,191 74	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	781 15	42,134 49
E.—*Cash.*		
31. (*a*) On hand	10,834 85	
32. (*b*) In bank	25,129 29	35,964 14
F.—*Assets not Hereinbefore Mentioned.*		
37. (*a*) Office furniture		500 00
Total of assets owned beneficially by Corporation		839,043 94

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.
A.—*Balances from 31st December, 1896.*			
Item No. 2. (i) On hand			6,259 00
B.—*Sums received wholly or partly on Capital Stock.*			
4. (*a*) Call on Joint Stock Permanent Capital		33,676 98	
5. (*b*) Premiums on (4)		4,500 00	38,176 98
C.—*Receipts on Account of Investments, Loans or Debts.*			
(*a*) On Mortgages of Realty :—			
10. (i) Principal	92,624 64		
11. (ii) Interest	37,988 63		
(*q*) On other Securities :—			
12. (i) Principal	41 907 09		
13. (ii) Interest or Dividends	1,629 85		174,150 21
F.—*Borrowed Money.*			
26. (*q*) Borrowed by taking deposits			457,090 70
27. (*c*) Borrowed on Debentures			52,382 50
G.—*Receipts from other sources, viz.* :			
30 (*a*) No particulars			930 99
Totals			728,990 38

Cash Account

Expenditure for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
		$ c.	$ c.
	I.—Expended on Corporation Account.		
	A.—*Sums Loaned or Invested on Capital Account.*		
1.	(*a*) Loaned on Mortgages of Realty (including item 7)	187,143 74	
	(*q*) Loaned or invested in other securities, viz.:		
2.	(i) Municipal debentures	28,506 98	
3.	(ii) Permanent stock	8,695 00	224,345 72
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock. (*Extend into column 1*)	17,602 92	17,602 92
	C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*		
18.	(*a*) Bank account (principal and interest)	3,467 54	3,467 54
19.	(*q*) Deposits: Principal, $406,457.30; interest, $161.63		406,618 93
20.	(*c*) Debentures issued in Canada: Principal, $32,857.68; interest, $4,044.12		36,901 80
	D.—*Management Expenses (other than foregoing).*		
25.	(*a*) Salaries and fees	2,421 85	
27.	(*c*) Advances to agents	182 83	
28.	(*d*) Stationery, postage, printing and advertising	255 76	
29.	(*e*) Law costs	4 00	
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates	1,052 24	3,916 68
	E.—*Other Expenditure, viz.:*		
33.	(*a*) Telephone, water rates, light, etc	72 65	
34.	(*q*) Registration	100 00	172 65
	F.—*Balance.*		
37.	(*a*) Cash on hand	10,834 85	
	(*b*) Cash in bank	25,129 29	35
	Totals		728,990 38

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

		$ c.
1.	Amount of debentures issued by the Corporation in Canada which will mature in 1898	38,022 66
4.	Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	24,105 49
5.	Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3.07%; on debentures, 4.2%; on debenture stock, none.	
7.	Of the mortgages held by the Corporation all are on realty situate in Ontario.	
8.	Loans written off or transferred to real estate account during 1897, none.	
9.	Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897—number, none; amount, none.	
10.	Aggregate market value of the land mortgaged to the Corporation, about $1,200,000.	
11.	How often are the securities held by the Corporation valued? Yearly.	
12.	(*a*) What officers of the Corporation are under bond and for what sum respectively? None.	
13.	When were the accounts of the Corporation last audited? Monthly.	
14.	Names and address of the auditors respectively for 1897 and 1898 (if appointed). John Brebner and John Farquharson, Sarnia.	

THE LAMBTON LOAN AND INVESTMENT COMPANY.

Head Office, Sarnia, Ontario.

Incorporated under the Building Societies Act, 9 Vic., c. 90, (Province of Canada) by declaration filed on 27th March, 1847, with the Clerk of the Peace for the Western District. The original corporate name was "The Port Sarnia Building Society." The society was re-organized as "The Lambton Permanent Building and Investment Society," under chapter 53 of the Consolidated Statutes of Upper Canada, by declaration filed 19th June, 1855, with the Clerk of the Peace for the County of Lambton. This latter corporate name was changed by Order-in-Council, 4th June, 1880, to The Lambton Loan and Investment Company.

The lending and the borrowing powers are governed by the Loan Corporations Act, R.S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Lambton Loan and Investment Company of Sarnia, Ont., at the 30th June, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is on Front street, in the Town of Sarnia, in the Province of Ontario.

The Board is constituted of ten directors holding office for two years.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Name of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date)
Charles McKenzie	President	Sarnia	July, 1897	July, 1899
Isaac Unsworth	Vice-President	Florence	" 1896	" 1898
Alex. Johnston	Inspector	Sarnia	" 1896	" 1898
George Shirley	Director	Watford	" 1897	" 1899
John Paul	Director	Sarnia	" 1897	" 1899
F. W. Kittermaster	Director	"	" 1896	" 1898
R. Tannahill	Director	"	" 1896	" 1898
A. Laing	Director	Wyoming	" 1897	" 1899
Thomas Boulton	Director	Moore	" 1897	" 1899
Antrobus C. Clark	Manager / Secretary	Sarnia	" 1896	" 1898

A. Permanent capital stock: total amount authorized, $1,000,000; total amount subscribed, $500,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st Dec., 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the corporation.
	No. of shares.	Par value of shares.	——		
		$	$ c.	$ c.	$ c.
1. Fully paid	10,000	50	500,000 00	499,722 19	277 81
Totals	10,000	50	500,000 00	499,722 19	277 81

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 30TH JUNE, 1897.

Capital and Liabilities.

DR.

——	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (a) Ordinary joint stock capital fully called: total called, $500,000; total paid thereon	499,603 51	
6. (f) Reserve fund in respect of (1), (2) or (3)	250,000 00	
7. (g) Contingent fund in respect of (1), (2) or (3)	15,905 06	
		765,508 57
LIABILITIES TO THE PUBLIC.		
27. Deposits	480,042 00	
28. Interest on deposits capitalized	14,431 43	
29. Debentures issued in Canada	122,797 68	
30. Interest due and accrued on (29)	2,274 07	
		619,545 18
Total actual liabilities		1,385,053 75

Balance Sheet as at 30th June, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows:—		
2. (i) At Sarnia, held in freehold		6,000 00
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	1,196,813 17	
10. (*b*) Debts secured by mortgaged land held for sale	11,550 00	
11. (*c*) Interest due and accrued on items 9 and 10 and not included therein	41,948 89	
12. (*d*) Of the debts mentioned in items 9, 10 and 11, the sum of $700.00 is due by directors or officers of the Corporation. (Not extended)		1,250,312 06
C.—*Debts not above enumerated for which the Corporation holds securities as follows:*		
14. (*b*) Debts secured by municipal bonds or debentures	46,791 63	
15. (*c*) Debts secured by public school debentures	461 25	
20. (*h*) Debts secured only by permanent stock or shares of the Corporation	18,230 72	65,483 60
E.—*Cash.*		
31. (*a*) On hand	7,792 47	
32. (*b*) In banks	55,465 62	63,258 09
Total of assets owned beneficially by Corporation		1,385,053 75

Cash Account.

Receipts for the year ending 30th June, 1897.

Item No.			Total. (Column 4.)
	I.—Received by the Corporation for its own use.		
		$ c.	$
	A.—*Balances from 30th June, 1896.*		
	(*b*) Cash (not already shown under (1)):—		
2.	(i) On hand	5,897 35	
3.	(ii) In bank	41,444 90	47,342 25
	B.—*Sums Received Wholly or Partly on Capital Stock.*		
4.	(*a*) Calls on joint stock permanent capital		106 91
	C.—*Receipts on Account of Investments, Loans or Debts.*		
	(*a*) Mortgages of Realty:—		
10.	(i) Principal	142,106 19	
11.	(ii) Interest	77,794 78	219,900 97
	(*b*) On stocks:—		
12.	(i) Principal	1,661 42	
13.	(ii) Interest or dividends	1,244 43	2,905 85
	(*c*) On debentures:—		
14.	(i) Principal	10,580 07	
15.	(ii) Interest	2,398 12	12,978 19
	F.—*Borrowed Money.*		
26.	(*b*) Borrowed by taking deposits	401,241 77	
27.	(*c*) Borrowed on debentures	31,222 68	432,464 45
	G.—*Receipts from other sources, viz.:*		
30.	(*a*) General interest		1,917 57
	Totals		717,616 19

Cash Account.

Expenditure for the year ending 30th June, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. Column 1.)	Total. (Column 4.)
	I.—Expended on Corporation Account.	$ c.	$
	A.—*Sums loaned or invested on Capital Account*		
1.	(*a*) Loaned on Mortgages of Realty		144,782 34
	(*b*) Loaned or invested in other securities, viz. :—		
2.	(i) Municipal debentures		16,010 39
3.	(ii) Shareholders		1,433 19
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock. (*Extend into Column 1*)	39,964 32	39,964 32
	C.—*Borrowed money (other than foregoing) or interest thereon paid, viz.* :		
18.	(*a*) Bank account (principal and interest)		4,901 49
19.	(*b*) Deposits : principal, $389,374.50 ; interest, $355.28		389,729 78
20.	(*c*) Debentures issued in Canada : principal, $44,625.00 ; interest, $5,367.33		49,992 33
	D.—*Management Expenses (other than foregoing)* :		
25	(*a*) Salaries and fees	5,483 50	
26.	(*b*) Commission or brokerage	130 00	
28.	(*d*) Stationery, postage, printing and advertising	292 52	
29.	(*e*) Law costs	178 25	
30.	(*f*) Fuel, rent, taxes (other than in 32), rates and sundries	265 13	
31.	(*g*) Travelling expenses	13 00	6,362 40
	E.—*Other Expenditures, viz.* :		
33.	(*a*) Repairs to office	67 49	
34.	(*b*) Alterations	236 50	
35.	(*c*) Income tax	866 37	
36.	(*d*) General interest	11 50	1,181 86
	F.—*Balance*		
37.	(*a*) Cash on hand	7,792 47	
	(*b*) Cash in various banks	55,465 62	63,258 09
	Totals		717,616 19

Miscellaneous Statement for the Year Ending 30th June, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	42,397 68
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898. Municipal debentures	14,209 78
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3.072%; on debentures, 3.92%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5.9 %; on other securities, 5.9 %	
7. Of the mortgages held by the Corporation $1,142,118.35 is on realty situate in Ontario, and $96,643.71 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897? None Provided for anticipated losses	2,619 43
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897. No., 3. Amount, $3,161.86.	
10. Aggregate market value of the land mortgaged to the Corporation	1,984,000 00
11 How often are the securities held by the Corporation valued? In the case of doubtful loans annually or oftener.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager and Secretary-Treasurer, $10,000; Assistant Secretary-Treasurer, $5,000.	
13. When were the accounts of the Corporation last audited? Daily audit.	
14. Names and address of the auditors respectively for 1897 and 1898: T. W. Nesbet, T. F. Towers, Sarnia.	

THE LANDED BANKING AND LOAN COMPANY.

Head Office, Hamilton, Ontario.

Incorporated under the Building Societies Act, Consol. Stat. U. C., chap. 53, by declaration filed with the Clerk of the Peace for the County of Wentworth, 16th December, 1876.

The lending and the borrowing powers are governed by the Loan Corporations Act, R.S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Landed Banking and Loan Company of Hamilton, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 31 James street south, in the City of Hamilton, in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Current term of office.	
			Began (date).	Will end (date).
Matthew Leggat	President	Hamilton	17th Feb., 1897	16th Feb., 1898.
John Waldie	Vice-President	Toronto	"	"
Thomas, Bain, M.P	Director	Dundas	"	"
Samuel Barker	Director	Hamilton	"	"
R. A. E. Kennedy	Director	"	"	"
J. J. Mason	Director	"	"	"
Henry McLaren	Director	"	"	"
C. W. Cartwright	Manager	"	December, 1890	31st Dec., 1897.

A. Permanent capital stock: total amount authorized, $700,000; total amount subscribed, $700,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a)—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	——		
		$ c	$ c.	$ c.	$ c.
1. Fully paid	7,000	100 00	700,000 00	688,098 92	
Totals	7,000	100 00	700 000 00	688,098 92	

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

Item No.	——	$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	A.—*Permanent Capital Stock or Shares.*		
1.	(*a*) Ordinary joint stock capital fully called: total called, $700,000; total paid thereon	688,098 92	
4.	(*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	20,211 46	
5.	(*e*) Unappropriated profits in respect of (1), (2) or (3)	6,064 77	
6.	(*f*) Reserve fund in respect of (1), (2) or (3)	160,000 00	
			874 375 15
	LIABILITIES TO THE PUBLIC.		
27.	Deposits	455,486 24	
28.	Interest on deposits, due, or accrued or capitalized	819 49	
29.	Debentures issued in Canada	452,488 84	
30.	Interest due and accrued on (29)	6,924 65	
31.	Debentures issued elsewhere than in Canada	246,605 21	
32.	Interest due and accrued on (31)	1,378 63	
39.	Due on loans in process of completion or to pay assumed mortgages	5,922 27	
40	Other liabilities to the public, viz.:		
41.	(*a*) Directors' and auditors' fees, valuators' commissions, etc	1,513 97	
			1,171,139 30
	Total actual liabilities		2,045,514 45

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing	77,937 54	77,937 54
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	1,755,266 88	
10. (*b*) Debts secured by mortgaged land held for sale	81,905 28	1,837,172 16
C.—*Debts not above enumerated for which the Corporation holds securities as follows:*		
14. (*b*) Debts secured by municipal bonds or debentures	73,529 03	
15. (*c*) Debts secured by public school debentures	3,360 00	
16. (*d*) Debts secured by loan corporations' debentures	5,046 06	81,935 09
E.—*Cash*		
31. (*a*) On hand	8,370 32	
32. (*b*) In bank	40,099 34	48,469 66
Total of assets owned beneficially by Corporation		2,045,514 45

CASH ACCOUNT.

Receipts for the year ending 31st December, 1897.

Item No.		Total. (Column 4)
	I.—RECEIVED BY THE CORPORATION FOR ITS OWN USE.	$ c.
	A.—*Balances from 31st December, 1896.*	
	(*b*) Cash (not already shown under (1)).	
	(i) On hand	2,070 47
	(ii) In bank	50,394 43
	B.—*Sums Received wholly or partly on Capital Account.*	
4.	(*a*) Call on joint stock permanent capital	1,150 50
	C.—*Receipts on Account of Investments, Loans or Debts.*	
	(*a*) On Mortgages of Realty:	
10.	(i) Principal	411,474 12
11.	(ii) Interest	
	(*b*) On other securities:	
12.	(i) Principal	5,827 28
13.	(ii) Interest on dividends	
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*	
17.	(*b*) Rents	3,455 32
	E.—*Miscellaneous.*	
18.	(*a*) Commission, brokerage (or remuneration as corporate agent, trustee, etc.)	237 73
	F.—*Borrowed Money.*	
26.	(*b*) Borrowed by taking deposits	876,042 42
27.	(*c*) Borrowed on debentures	80,774 16
	G.—*Receipts from other Sources, viz.:*	
30.	(*a*) Sundry receipts	2,288 3
	Totals	1,433,714 81

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
I.—Expended on Corporation Account.		
A.—*Sums Loaned or Invested on Capital Account.*	$ c.	$ c.
Item No. 1. (*a*) Loaned on Mortgages of Realty		310,150 99
(*b*) Loaned or invested in other securities, viz.:		
2. ( ) Debentures		36,523 12
B.—*Expended on Stock Account:*		
8. Dividends paid on permanent stock. (*Extend into column 1*)		40,377 46
C.—*Borrowed Money (other than foregoing) or Interest thereon Paid, viz.:*		
19 (*b*) Deposits: Principal, $919,723.73; interest, $2,838.62		922,562 35
20. (*c*) Debentures issued in Canada: Principal, $17,560; interest, $18,371.05		35,931 05
21. (*d*) Debentures issued elsewhere: Principal, $12,896.66; interest, $9,843.64		22,740 30
D.—*Management Expenses (other than foregoing).*		
25. (*a*) Salaries and fees	7,608 04	
26. (*b*) Commission or brokerage	1,976 37	
28. (*d*) Stationery, postage, printing and advertising	712 35	
29. (*e*) Law costs	92 31	
30. (*f*) Fuel, rent, taxes (other than 32) and rates	1,953 10	
31. (*g*) Travelling expenses. Inspector's salary	4,557 71	16,899 88
E.—*Other Expenditures, viz.*		
23. (*a*) Unclaimed dividends		60 00
F.—*Balance.*		
37. (*a*) Cash on hand	8,370 32	
(*b*) Cash in various bank	40,099 34	48,469 66
Totals		1,433,714 81

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897

	$ c.
1. Amount of Debentures issued by the Corporation in Canada which will mature in 1898..	172,555 16
2. Amount of Debentures issued by the Corporation elsewhere which will mature in 1898..	42,340 00
3. Amount of other existing obligations of the Corporation which will mature in 1898.....	455,486 24
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	167,861 24
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3.022%; on debentures, 4.29%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6.27%; on other securities, 4 104%.	
7. Of the mortgages held by the Corporation, $1,461,080.67 is on realty situate in Ontario, and $294,186.21 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	29,314 25
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897: No., 15; amount	35,856 16
10. Aggregate market value of the land mortgaged to the Corporation	3,180,247 00
11. How often are the securities held by the Corporation valued? Yearly or oftener.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Treasurer, $10,000; accountant, $5,000; teller, $5,000.	
13. When were the accounts of the Corporation last audited? January, 1898.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed): W. F. Findlay, F.C.A., Wm. Marshall.	

THE LONDON AND CANADIAN LOAN AND AGENCY COMPANY (LIMITED).

Head Office, Toronto, Ontario.

Constating Instruments.

1863 The Company was incorporated in 1863 by special Act of the Province of Canada, 27 V. c. 50, which has been from time to time amended by six special Acts of the Dominion of Canada, viz. :

1872. 35 V. c. 108 (D).
1873. 36 V. c. 107 (D).
1876. 39 V. c. 60 (D).
1879. 42 V. c. 75 (D).
1889. 52 V. c. 93 (D).
1891. 54-5 V. c. 114 (D).

For the lending powers of the Company, see 27 V. (1863), c. 50 (Province of Canada) secs. 3 and 4; 35 V. (1872), c. 108 (D), sec. 5; also sec. 6 as amended by 36 V. (1873), c. 107 (D), s. 8; 36 V. (1873), c. 107 (D), sec. 9; and 35 V. (1872), c. 108 (D), sec. 7, as amended by 36 V. (1873), c. 107 (D), s. 10.

For the borrowing powers of the Company see 27 V. (1863), c. 50 (Province of Canada), s. 5, as amended by 36 V. (1873), c. 107 (D), s. 1; 35 V. (1872), c. 108 (D), s. 8, as amended by 39 V. c. 60 (D), s. 1; 54-5 V. (1891), c. 114 (D), s. 2 (Issue of debenture stock.)

Annual Statement

Of the condition and affairs of The London and Canadian Loan and Agency Company (Limited), of Toronto, Ontario, at the 31st August, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 103 Bay street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of nine directors holding office for one year.

The directors and chief executive officers of the Corporation at 31st December, 1897, were as follows :

Name of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date.)
George R. R. Cockburn, M.A.	President	Toronto, Ont.	13th October, 1897	12th October, 1898
James Henderson	Vice-President.	"	"	"
Col. Sir Casimer S. Gzowski, K.C.M.G.	Director	"	"	"
Sir W. P. Howland, C. B., K.C.M.G.	Director	"	"	"
Donald Mackay	Director	"	"	"
Lord Strathcona and Mount Royal	Director	Montreal	"	"
Larratt W. Smith, Q. C., D.C.L.	Director	Toronto	"	"
Sir Sandford Fleming, K.C.M.G., C.E., LL.D.	Director	Ottawa	"	"
Thomas Long	Director	Toronto	"	"
James Ferrier Kirk	Manager	"		

A.—Permanent capital stock: Total amount authorized, $5,000,000; total amount subscribed, $5,000,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a)—Fixed and permanent capital stock created by virtue of Building Society Acts.

None.

(b) Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or Private Acts.

Last call made: Date, 1879, rate per cent., 4%; gross amount, $160,000; paid thereon, $160,000.

This call was made on 80,000 shares, making then 14% paid; the Company subsequently issued 20,000 shares, 14% paid.

Description.	No. of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		$ c.	$ c.	$ c.
1. Fully paid				
2. 14%	100,000	5,000,000 00	700,000 00	

LIST OF SHAREHOLDERS AS AT 31ST AUGUST, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST AUGUST, 1897.

Capital and Liabilities.

DR.

Item No.		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS.)		
	A.—*Permanent Capital Stock or Shares.*		
2.	(b) Ordinary Joint Stock capital 14 per cent. called; total called $700,000; total paid thereon	700,000 00	
4.	(d) Dividends declared in respect of (1), (2) or (3)	10,500 00	
5.	(e) Unappropriated profits in respect of (1), (2) or (3)	6,926 53	
6.	(f) Reserve fund in respect of (1), (2) or (3)	210,000 00	
7.	(g) Contingent Fund in respect of (1), (2) or (3). (Reserve Fund to meet contingencies, etc)	145,577 05	
	LIABILITIES TO THE PUBLIC.		1,073,003 58
29.	Debentures issued in Canada	1,000 00	
30.	Interest due and accrued on (29)	6 98	
31.	Debentures issued elsewhere than in Canada	2,585,416 66	
32.	Interest due and accrued on (31)	16,749 11	
35.	Debenture stock issued elsewhere than in Canada	486,666 67	
36	Interest due and accrued on (35)	5,760 00	
37.	Owing to Banks including interest due or accrued in Britain)	3,919 67	
40.	Other liabilities to the public, viz.:—		
41.	(a) Sundry creditors (outstanding cheques)	14,358 88	
42.	(b) Sterling certificates payable at fixed dates	209,294 63	
43.	(c) Interest due and accrued on same	690 70	
44.	(d) Currency certificates payable at fixed dates	5,500 00	
45.	(e) Interest due and accrued on same	41 74	
			3,329,405 04
	Total actual liabilities		4,402,408 62

BALANCE SHEET AS AT 31ST AUGUST, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :—		
2. (i) At Winnipeg, Man., held in freehold	45,000 00	
3. (ii) At Toronto, Ont., held in leasehold (building erected by Company)	75,000 00	
5. (*b*) Freehold land (including buildings) other than foregoing	35,381 67	155,581 67
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	3,013,563 92	
10. (*b*) Debts secured by mortgaged land held for sale	384,704 40	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	142,213 16	
12. (*d*) Of the debts mentioned in items 9, 10 and 11 the sum of $2 013.46 is due by directors or officers of the Corporation. (Not extended)		3,540,481 48
C.—*Debts not above Enumerated for which the Corporation holds Securities, as follows.*		
22. (*j*) Municipal bonds or debentures owned by Company	370,700 03	
23. (*k*) Public school " " " "	52,162 62	
24. (*l*) Hypothecation of stocks and insurance policies	245,012 74	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	7,246 28	675,121 67
E.—*Cash.*		
31. (*a*) With Company's agents in Britain		327 87
32. (*b*) In banks in Canada		28,057 67
F.—*Assets not Hereinbefore Mentioned.*		
37. (*a*) Sundry debtors		3,038 26
Total of assets owned beneficially by Corporation		4,402,408 62

Cash Account.

Receipts for the year ending 31st August, 1897.

Item No.		Amount carried to earnings, maintenance and contingent account. (Column 3.)	Total. (Column 4.)
	I.—Received by the Corporation for its own use.	$ c.	$ c.
	A.—*Balances from 31st August, 1896.*		
1.	(*b*) Cash (not already shown under (1))		
2.	(i) On hand, balance due by British agents		466 68
3.	(ii) In banks in Ontario and Winnipeg, Man $54,995 64		
	Less due British bankers 30,473 95		24,521 69
	C.—*Receipts on Account of Investments, Loans or Debts.*		
	(*a*) On Mortgages of Realty:		
10.	(i) Principal		428,342 76
11.	(ii) Interest	186,034 58	186,034 58
	(*b*) On other Securities:		
12.	(i) Principal		274,324 75
13.	(ii) Interest or dividends	20,094 73	20,094 73
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*		
16.	(*a*) Sales (not included in any of foregoing items)		35,606 23
17.	(*b*) Rents		
	F.—*Borrowed Money.*		
27.	(*c*) Borrowed on debentures or certificates payable at fixed dates		736,447 22
29.	(*d*) Borrowed otherwise, viz.: Outstanding cheques (difference between 1896 and 1897)		4,891 10
	G.—*Receipts from other sources, viz.*		
30.	(*a*) Paid in by sundry debtors		363 85
	Totals	206,129 31	1,711,093 59

Cash Account.

Expenditure for the year ending 31st August, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c.
Item No. A.—*Sums Loaned or Invested on Capital Account*		
1. (*a*) Loaned on Mortgages of Realty		337,595 49
(*b*) Loaned or invested in other Securities, viz. :—		
2. (i) Loans on Stocks and Bonds		254,342 42
3. (ii) Debentures purchased		33,914 61
4. (iii) Loans on Life Policies		50,155 84
6. (*c*) Real estate taken over during the year		19,478 62
B.—*Expended on Stock Account.*		
8. Dividends paid on permanent Stock. (*Extend into Column 1*). (including dividend reserved in 1896, $21,000)	52,500 00	52,500 00
C.—*Borrowed Money (other than foregoing) or Interest thereon Paid, viz.:*		
21. (*d*) Debentures issued elsewhere: Principal, $746,155.77; interest, $127,374.66, including interest on Debenture Stock	127,374 66	873,530 43
D.—*Management Expenses (other than foregoing.)*		
25. (*a*) Salaries, Toronto and Winnipeg	16,777 48	
Director's Fees	2,125 00	
26. (*b*) Commission or brokerage	5,930 60	
27. (*c*) Advances to agents, agency charges, British Directors fees, and including expenses incidental to annual meeting	2,294 78	
28. (*d*) Stationery, postage, printing and advertising	2,941 20	
29. (*e*) Law costs	423 96	
30. (*f*) Fuel, rent, taxes (other than in 32) and rates including tax on dividend	2,019 59	
31. (*g*) Travelling expenses	1,566 72	
32. (*h*) Insurances or taxes advanced on property held by the Corporation (deducted from interest account).		
32½ (*i*) Registration Fee Loan Corporations Act and sundries	405 00	
		34,514 33
E.—*Other Expenditures, viz.:*		
33. (*a*) Written off Contingent Account (reserve to meet contingencies)		28,996 48
34. (*b*) Paid President and Auditors		1,600 00
F.—*Balance.*		
37. (*a*) Cash due by British agents		327 87
(*b*) Cash in various banks in Canada	28,057 67	
(*i*) Less due British banks	3,919 67	
		24,138 00
Totals		1,711,093 59

Miscellaneous Statement for the Year Ending 31st August, 1897.

	$ c.
1. Amount of debentures issued by the corporation in Canada which will mature in year ending 31st August, 1898	1,000 00
2. Amount of debentures issued by the corporation elsewhere which will mature in year ending 31st August, 1898	764,767 00
3. Amount of other existing obligations of the corporation which will mature in year ending 31st August, 1898	
4. Amount of securities held by the corporation which will mature and become payable to the corporation in year ending 31st August, 1898	516,332 13
5. Average rate of interest per annum paid by the corporation during 1897 on deposits, ——— ; on debentures, 3.97 % ; on debenture stock, 4 %.	
6. Average rate of interest per annum received by the corporation during 1897 on Mortgages of Realty, 5 % ; on other securities, 4 %.	
7. Of the mortgages held by the corporation, $2,331,000 is on realty situate in Ontario, and $1,067,000 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897—written off $28,996.48 ; transferred to real estate account, $19,478.62 ; disposed of out of real estate account, $35,606.23.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the corporation in 1897, No. 53 ; amount	75,702 00
10. Aggregate market value of the land mortgaged to the corporation, about	7,500,000 00
11. How often are the securities held by the corporation valued ? In the case of doubtful loans, annually or oftener.	
12. (a) What officers of the corporation are under bond and for what sum respectively ? Manager, Toronto, $4,000 ; local manager, Winnipeg, $5,000 ; accountant, Toronto, $3,000 ; accountant, Winnipeg, $3,000 ; assistant accountant, Toronto, $3,000 ; inspector, Winnipeg, $2,000 ; 4 clerks, $2,000 each ; 2 clerks, $1,000 each.	
13. When were the accounts of the corporation last audited ? Audited monthly, last complete yearly audit 31st August, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). David Higgins, Toronto ; J. J. Woodhouse, Toronto.	

THE LONDON AND ONTARIO INVESTMENT COMPANY, LIMITED.

Head Office, Toronto, Ontario.

Constating Instruments.

1876. Incorporated by Special Act of Dominion of Canada, 39 V. c. 62 (D).

1877. Dominion Act defining borrowing powers and permitting amalgamation with other Companies, 40 V. c. 78 (D).

1883. Dominion Act as to collateral securities to be taken by Company, 46 V, c. 87 (D).

1886. Dominion Act, 42 V. c. 49, applying to this Company the provisions of the Public General Act, 42 V. c. 49 (D).

For the lending powers of the Company, see 39 V. c. 62 (D), s. 4, as amended by 40 V. c. 78 (D), secs. 1 and 6; also 39 V. c. 62 (D), secs. 6, 7 and 8; 40 V. c. 78 (D), s. 4; 46 V. c. 87 (D), s. 1.

For the borrowing powers of the Company, see 39 V. c. 62 (D), s. 5, as amended by 40 V. c. 78 (D), s. 2; 40 V. c. 78 (D), s. 3.

Annual Statement

Of the condition and affairs of The London and Ontario Investment Company, Limited, of Toronto, Ont., at the 30th June, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 17 Melinda street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of nine directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Hon. Sir Frank Smith...	President	Toronto, Ont..	16th Sept., 1897....	15th Sept. 1898.
Wm. H. Beatty	Vice-President ..	"	"	"
William Ramsay	Director	Boland Stow, Scotland.	" ...	"
W. B. Hamilton.....	Director	Toronto	"	"
Arthur B. Lee.....	Director	"	"	"
Alex. Nairn	Director	"	"	"
Henry Gooderham	Director	"	"	"
Frederick Wyld	Director	"	"	"
John F. Taylor....	Director	"	"	"
A. M. Cosby	Manager ..... / Secretary... ..	"	1877.	

A. Permanent capital stock: Total amount authorized, $3,000,000; total amount subscribed, $2,750,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*a*) *Fixed and Permanent Capital Stock created by virtue of Building Society Acts.*—None.

(*b*) *Fixed and Permanent Capital Stock created by virtue of Joint Stock Companies' Acts or Private Acts.*

Last call made: Date, 1st March, 1892, being in respect of a new issue, 2,500 shares at $100; rate per cent., 20; gross amount, $50,000; paid thereon, $50,000.

Description.	No. of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		$ c.	$ c.	$ c.
1. Fully called				
2. 20 per cent	27,500	2,750,000 00	550,000 00	
Totals	27,500	2,750,000 00	550,000 00	

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 30TH JUNE, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS.)		
Item No. A.—*Permanent Capital Stock or Shares.*		
2. (*a*) Ordinary joint stock capital 20% called: Total called $550,000.00; Total paid thereon	550,000 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	16,500 00	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	160,000 00	
7. (*g*) Contingent fund in respect of (1), (2) or (3)	26,244 19	
		752,744 19
LIABILITIES TO THE PUBLIC.		
29. Debentures issued in Canada	529,397 31	
30. Interest due and accrued on (29)	9,269 86	
31. Debentures issued elsewhere than in Canada	1,635,524 71	
32. Interest due and accrued on (31)	9,675 89	
37. Owing to banks (including interest due or accrued) due Royal Bank of Scotland	15,631 00	
40. Other liabilities to the public, viz:—		
41. (*a*) Sundry accounts due by the Company	1,022 49	
		2,200,521 26
Total actual liabilities		2,953,265 45

Balance Sheet as at 30th June, 1897.

Cr.

		$ c.	$ c.
	I.—Assets of which the Corporation is the Beneficial Owner.		
	A.—*Immovable Property Owned Beneficially by Corporation.*		
5.	(*b*) Freehold land (including buildings) other than foregoing.....	.....	69,671 00
	B.—*Debts Secured by Mortgages of Land.*		
9.	(*a*) Debts (other than item 10) secured by mortgages of land, including interest.....	2,476,999 89	
10.	(*b*) Debts secured by mortgaged land held for sale, including interest	260,184 00	2,737,183 89
	C.—*Debts not above enumerated for which the Corporation holds Securities as follows:*		
16.	(*b*) Debts secured by municipal bonds or debentures	80,492 14	
20	(*h*) Debts secured only by permanent stock or shares of the Corporation.....	10,365 63	
26.	(*n*) Interest due or accrued on items 14 to 25 and not included therein.....	1,310 39	92,168 16
	D.—*Unsecured Debts.*		
27.	(*a*) Sundry accounts due the Company	.....	1,004 88
	E.—*Cash.*		
31.	(*a*) On hand	1,582 75	
32.	(*b*) In bank.....	49,533 38	51,116 13
	F.—*Assets not hereinbefore mentioned.*		
37.	(*a*) Government certificate for land payments.	621 39	
38.	(*b*) Office furniture, fixtures and stationery.....	1,500 00	2,121 39
	Total of assets owned beneficially by Corporation.....	.....	2,953,265 45

Cash Account.

Receipts for the year ending 30th June, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Totals. (Column 4.)
		$ c.	$ c.
	I.—Received by the Corporation for its own use.		
	A.—Balances from 30th June, 1896.		
	(*b*) ash (not already shown under (1)) :		
2.	(i) On hand		130 48
3.	(ii) In bank		24,068 97
	C.—Receipts on account of Investments, Loans or Debts.		
	(*a*) On Mortgages of Realty :		
10.	(i) Principal		*120,000 00
11.	(ii) Interest.....income.	153,419 27	*160,000 00
	(*b*) On other securities :		
12.	(i) Principal		4,666 67
13.	(ii) Interest or dividends	3,307 94	3,307 94
	F.—Borrowed Money.		
25.	(*a*) Bank or other advances, discounts or overdrafts		15,631 00
27.	(*c*) Borrowed on debentures		163,604 23
	G.—Receipts from other sources, viz. :		
30.	(*a*) Rentals received not regarded as income and repayments of insurance and other outlays by mortgagors		23,223 40
	Totals	156,727 21	514,632 69

* Cash receipts, approximately.

Cash Account.

Expenditure for the year ending 30th June, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I.—Expended on Corporation Account.	$ c.	
	A.—*Sums Loaned or Invested in Capital Account.*		
1.	(a) Loaned on Mortgages of Realty		125,300 00
	(b) Loaned or invested in other securities :		
2.	(i) City of Toronto Debentures		9,721 41
3.	(ii) Permanent shares of the Company		3,973 74
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock. (*Extend into Column 1*)	33,000 00	33,000 00
	C.—*Borrowed Money (other than foregoing) or Interest thereon paid, viz.:*		
18.	(b) Bank account (principal and interest)	2,202 66	2,202 66
20.	(c) Debentures issued in Canada : Principal, $32,500	32,500 00	
21.	(d) Debentures issued elsewhere : Principal, $90,104.67	90,104 67	
	Interest on debentures (items 20 and 21)	86,144 43	208,749 10
	D.—*Management Expenses other than foregoing.*		
25.	(a) Salaries and fees	15,230 27	
26.	(b) Commission or brokerage	5,430 56	
28.	(d) Stationery, postage, printing and advertising, and general office expenses	2,325 35	
29.	(e) Law costs	128 61	
30.	(f) Fuel, rent, taxes (other than in 32) and rates, and municipal tax on Dividend	2,808 62	
31.	(g) Travelling expenses and inspectors' salaries (land inspection)	3,899 05	29,822 46
	E.—*Other Expenditures, viz.:*		
33.	(a) Surplus in year in income account	5,557 66	
34.	(b) Expenditure on property held for sale and other expenditures, including item 32, all assumed to make up this amount to balance		50,747 19
	F.—*Balance.*		
37.	(a) Cash on hand 1,582 75		
	(b) Cash in various banks 49,533 38		51,116 13
	Totals	156,727 21	514,632 69

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 30TH JUNE, 1897.

	$ c.
1. Amount of Debentures issued by the Corporation in Canada which will mature in 1898	279,938 97
2. Amount of Debentures issued by the Corporation elsewhere which will mature in 1898	140,549 33
3. Amount of other existing obligations of the Corporation which will mature in 1899. None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	325,918 75
5. Average rate of interest per annum paid by the Corporation during year 1896-1897 on deposits, none ; on debentures, 4 1086 % ; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during year 1896-1897 on Mortgages of Realty, 5.736 % ; on other securities, 4 390 %.	
7. Of the mortgages held by the Corporation $1,734,064 is on realty situate in Ontario, and $896,362 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during year 1896 1897, 43, amounting to $66,065.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in years 1896-1897. No., 38 ; amount, $62,189.	
10. Aggregate market value of the land mortgaged to the Corporation, estimated at $4,-222,555.	
11. How often are the securities held by the Corporation valued ? Doubtful ones frequently, others when occasion arises.	
12. (a) What officers of the Corporation are under bond and for what sum respectively ? Manager, $7,500 ; assistant manager, $2,500 ; inspector, $2,500 ; cashier, $3,000 ; 2 clerks, $1,000 each ; at Winnipeg : agent, $7,500 ; inspector, $2,000 ; cashier and accountant, $3,000.	
13. When were the accounts of the Corporation last audited ? 30th June, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). W. R. Harris and Thos. Hodgetts, Toronto.	

THE METROPOLITAN LOAN AND SAVINGS COMPANY.

Head Office, Ottawa, Ont.

Incorporated under The Building Societies Act, Consol. Stat. U. C., chap 53, by declaration filed with the Clerk of the Peace for the County of Carleton, 1st June, 1870. The original corporate name was The Metropolitan Building and Saving Society, which name was by Order-in-Council of Ontario, 10th February, 1876, changed to The Metropolitan Loan and Savings Company.

The lending and the borrowing powers are governed by the Loan Corporations Act, R S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Metropolitan Loan and Savings Company of Ottawa, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 110 Wellington street, in the City of Ottawa, in the Province of Ontario.

The Board is constituted of directors, holding office for years.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
H. V. Noel	President	Ottawa, Ont	21st January, 1897.	21st January, 1898.
John Mather	Vice-President	"	"	"
Henry N. Bate	Director	"	" 1896.	" 1898.
Newel Bate	Director	"	"	"
J. R. Allan	Director	"	" 1897.	" 1899.
George Hay	Director	"	"	"
John H. Pinkey	Director	"	"	"
A. W. Flick	Director	"	"	"
C. R. Cunningham	Secretary-Treas.	"	.....	.....

A. Permanent capital stock: Total amount authorized, $320,000; total amount subscribed, $320,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a) *Fixed and Permanent Capital Stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the corporation.
	No. of shares.	Par value.			
		$	$ c.	$ c.	$ c.
1. Fully paid	8,000	40	320,000 00	310,591 93	9,408 07
2. Prepaid	.....	.....	.....	.....	.....
Totals.....	8,000	40	320,000 00	310,591 93	9,408 07

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (a) Ordinary joint stock capital fully called: Total called $320,000; total paid thereon.....	310,591 93	
4. (d) Dividends declared in respect of (1), (2) or (3), but not yet paid.....	7,764 79	
5. (e) Unappropriated profits in respect of (1), (2) or (3)	5,072 04	
6. (f) Reserve fund in respect of (1), (2) or (3).....	30,000 00	
		353,428 76
LIABILITIES TO THE PUBLIC.		
27. Deposits	.....	64,518 54
Total actual liabilities.....	.....	417,947 30

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows:—		
2. (i) At Ottawa, held in freehold	20,590 00	
37. (*d*) Furniture	460 00	21,050 00
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	261,065 61	
10. (*b*) Debts secured by mortgaged land held for sale	96,480 51	357,546 12
20. (*h*) Debts secured only by permanent stock or shares of the corporation		6,889 45
E.—*Cash.*		
32. (*b*) In bank at Ottawa		32,461 73
Total of assets owned beneficially by Corporation		417,947 30

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I.—Received by the [Corporation for its Own use.	$ c.	$ c.
	A.—*Balances from 31st December, 1896.*		
3.	(ii) In bank	9,327 84	9,327 84
	C.—*Receipts on Account of Investments, Loans or Debts.*		
	(*a*) On Mortgages of Realty :—		
10.	(i) Principal	30,323 21	
11.	(ii) Interest	17,520 47	
	(*b*) On other securities :—		
13.	(ii) Interest or dividends	49 35	47,893 03
	F.—*Borrowed Money.*		
26.	(*b*) Borrowed by taking deposits		73,555 81
	Totals		130,776 68

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c
A.—*Sums loaned or invested on Capital Account*		
Item No. 1. (*a*) Loaned on Mortgages of Realty		47,144 65
B.—*Expended on Stock Account.*		
8. Dividends paid on permanent stock. (*Extend into column 1*)	15,529 58	15,529 58
C.—*Borrowed money (other than foregoing) or interest thereon paid, viz.:*		
19. (*b*) Deposits repaid		33,519 74
D.—*Management Expenses (other than foregoing):*		
25. (*a*) Salaries and fees	1,600 00	
27. (*c*) Registration fee	55 00	
28. (*d*) Stationery, postage, printing and advertising	81 85	
29. (*e*) Law costs	77 08	
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	292 12	2,106 05
E.—*Other Expenditures, viz.:*		
33. (*a* Sundries		14 93
F.—*Balance.*		
Cash in bank		32,461 73
Totals		130,776 68

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada, which will mature in 1898. None.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. None.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3½%; on debentures, none; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6 to 6½%; on other securities, none.	
7. Of the mortgages held by the Corporation $261,065.61 is on realty situate in Ontario, and none on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897, $250.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No., 2; amount	6,300 00
10. Aggregate market value of the land mortgaged to the Corporation	300,000 00
11. How often are the securities held by the Corporation valued? Half yearly.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Secretary-treasurer, $6,000.	
13. When were the accounts of the Corporation last audited? January, 1898.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed), Robert Sinclair and James Lindsay.	

THE MIDLAND LOAN AND SAVINGS COMPANY.

Head Office, Port Hope, Ont.

Incorporated under the Building Societies Act, Consol. Stat. U. C., Chap. 53, by declaration filed with the Clerk of the Peace for the United Counties of Northumberland and Durham, 5th July, 1872. (Decl. Book II., 127.)

The corporate name was, by Order-in-Council of Ontario, 21st June, 1876, (*Ibid*) changed to the Midland Loan and Savings Company.

The borrowing and the lending powers are governed by the Loan Corporations Act, R.S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Midland Loan and Savings Company of Port Hope, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is on Walton Street, in the Town of Port Hope, in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
John Mulligan	President	Port Hope	4th February, 1879.	6th February, 1899.
Henry H. Burnham	Vice-President	"	3rd " 1880.	"
William Quay	Director	"	3rd " 1885.	"
J. W. Clemesha, M.D	Director	"	4th " 1890.	"
J. H. Helm	Director	"	7th August, 1891.	"
William Henwood	Director	"	"	"
A. W. Pringle	Director	"	7th February, 1893.	"
George M. Furby	Manager / Secretary	"	1st March, 1882.	

A. Permanent capital stock: total amount authorized, unlimited; total amount subscribed, $560,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*a*).—*Fixed and permanent capital stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value.			
		$	$ c.	$ c.	$ c.
1. Fully called	6,200	50	310,000 00	310,000 00	
2. Prepaid	5,000	50	250,000 00	50,000 00	200,000 00
Totals	11,200		560,000 00	360,000 00	200,000 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed).

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: total called, $310,000.00; total paid thereon	310,000 00	
2. (*b*) Ordinary joint stock capital 20% called: total called, $50,000; total paid thereon	50,000 00	
4. (*d*) Dividends declared in respect of (1), (2) but not yet paid	10,928 05	
6. (*f*) Reserve fund in respect of (1), (2)	80,000 00	
7. (*g*) Contingent fund in respect of (1), (2)	24,668 10	
		475,596 15
LIABILITIES TO THE PUBLIC.		
27. Deposits	353,445 61	
28. Interest on deposits, due or accrued or capitalized	12,343 85	
29. Debentures issued in Canada	544,095 87	
30. Interest due and accrued on (29)	16,049 37	
		925,934 70
Total actual liabilities		1,401,530 85

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :		
2. (i) At Port Hope, held in freehold	7,000 00	
5. (*b*) Freehold land (including buildings) other than foregoing, foreclosed	32,744 19	39,744 19
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	1,104,584 54	
10. (*b*) Debts secured by mortgaged land held for sale	63,137 81	
11. (*c*) Interest due and accrued on item 9 and not included therein	60,296 75	1,228,019 10
C.—*Debts not above Enumerated for which the Corporation Holds Securities as follows.*		
15. (*c*) Debts secured by Public School Debentures	1,000 00	
20. (*h*) Debts secured only by Permanent Stock or Shares of the Corporation	8,277 45	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	561 89	9,839 34
D.—*Unsecured Debts.*		
27. (*a*) Rents due or accrued on Company's properties		2,572 78
E.—*Cash.*		
31. (*a*) On hand	800 00	
32. (*b*) In banks	120,555 44	121,355 44
Total of assets owned beneficially by Corporation		1,401,530 85

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
I.—Received by the Corporation for its own use.	$ c.	$ c.
Item No. A.—*Balances from 31st December, 1896.*		
1. (*b*) Cash (not already shown under (1)):		
2. (i) On hand	800 00	
3. (ii) In bank	78,684 95	79,484 95
C.—*Receipts on Account of Investments, Loans or Debts.*		
(*a*) On Mortgages of Realty :—		
10. (i) Principal	167,453 83	
11. (ii) Interest	77,757 34	
(*b*) On other Securities :—		
12. (i) Principal	3,938 67	
13. (ii) Interest or Dividends	543 96	249,693 80
D.—*Receipts from Real Estate Owned Beneficially by Corporation.*		
17. (*b*) Rent		3,011 34
E.—*Miscellaneous.*		
18. (*a*) Commission, insurance premiums, fees for discharges and inspections, fees which have been credited to expense account		697 16
F.—*Borrowed Money.*		
26. (*b*) Borrowed by taking deposits	329,782 77	
27. (*c*) Borrowed on debentures	289,481 92	619,264 69
Totals		952,151 94

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1)	Total. (Column 4.)
	I. Expended on Corporation Account.	$ c.	$ c.
	A.—*Sums Loaned or Invested on Capital Account.*		
1.	(*a*) Loaned on Mortgages of Realty		151,468 96
	(*b*) Loaned or invested in other Securities, viz.:—		
2.	(i) On Company's stock to shareholders		2,125 00
	B.—*Expended on Stock Account.*		
8.	Dividends paid on Permanent Stock. (*Extend into Column 1*)	21,618 85	21,618 85
	C.—*Borrowed Money (other than foregoing) or interest thereon paid, viz.:*		
19.	(*b*) Deposits: Principal	314,228 06	
20.	(*c*) Debentures issued in Canada: Principal, $308,755.93; interest, $24,162.75	332,918 68	647,146 74
	D.—*Management Expenses (other than foregoing).*		
25.	(*a*) Salaries and fees	5,578 19	
26.	(*b*) Commission: Agents for loans	256 12	
27.	(*c*) Taxes on dividends	440 00	
28.	(*d*) Stationery, postage, printing and advertising	444 26	
29.	(*e*) Law costs	2 00	
30.	(*f*) Fuel, taxes (other than in 32) and rates, etc	366 38	
31.	(*g*) Travelling expenses, inspection and valuations	483 42	
32.	(*h*) Insurances or taxes advanced on property mortgaged to the corporation	711 58	
	License fee	155 00	8,436 95
	F.—*Balance.*		
37.	(*a*) Cash on hand	800 00	
	(*b*) Cash in various banks	120,555 44	121,355 44
	Totals		952,151 94

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	401,357 00
3. Amount of other existing obligations of the Corporation which will mature in 1898, no other obligations except savings deposits.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898, including mortgages past due	532,729 00
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3 65 per cent.; on debentures, 4.25 per cent.; on both, 4.03 per cent.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty and on other securities, 6.1 per cent.	
7. Of the mortgages held by the Corporation $1,229,580 09 is on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897	29,188 82
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No., 8; amount	26,715 02
10. Aggregate market value of the land mortgaged to the Corporation, $2,300,000.	
11. How often are the securities held by the Corporation valued? There is a continuous inspection of securities. Over 100 mortgaged properties were inspected in 1897 and reported on.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Manager, $6,000; teller, $3,000; ledger keeper, $2,000.	
13. When were the accounts of the Corporation last audited? Audited quarterly, last audit completed 17th January, 1898.	
14. Names and address of the auditors respectively for 1897 and 1898. Henry White and John D. Smith, Port Hope.	

THE NORTH BRITISH CANADIAN INVESTMENT COMPANY (LIMITED).

Head Office, Glasgow, Scotland.

General Manager for Ontario: James Lendrum Scarth, Toronto.

Attorneys for Ontario to receive service or notice under the Loan Corporations Act. (Power of Attorney dated 31st August, 1897): James Lendrum Scarth, Toronto; William Barclay McMurrich, Q.C., Toronto, or either of them.

Attorneys for Canada to affix corporate seal used in Canada under *The* (Imp.) *Companies' Seals Act*, 1864, and to execute bills, notes, cheques, drafts and other negotiable instruments. (Power of Attorney dated 31st August, 1897.): James Lendrum Scarth, Toronto; William Barclay McMurrich, Q.C., Toronto; John Speirs Playfair, Toronto, or any two of them.

Constating Instruments.

The Company was incorporated under the (Imperial) Companies' Acts, 1862, 1867 by certificate of incorporation, dated 14th October, 1876, and issued by the Registrar of Joint Stock Companies for Scotland.

The Memorandum of Association, and the Articles of Association (both instruments bearing date 13th October, 1876), were filed in the Joint Stock Companies' Registry Office, Edinburgh, Scotland.

The Company, under the former law, received authority to do business in Ontario by license, bearing date 20th December, 1876, issued under 39 V. c. 27, Ontario.

For the lending powers see Memorandum of Association, section 3 (3).

For the borrowing powers see Memorandum of Association, section 3 (3); also Articles of Association, Arts. 104, 107-111. As to debenture stock, see Art. 113.

As to the lending and the borrowing powers in Ontario, see Loan Corporations Act, R.S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of The North British Canadian Investment Company (Limited), Glasgow, Scotland, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at 54 West Nile street, in the City of Glasgow, in Scotland.

The chief agency for Ontario is situated at No. 11 Toronto street, in the City of Toronto, in the Province of Ontario.

The Chief Agent and Attorney for Ontario is James Lendrum Scarth, and his address is No. 11 Toronto street, Toronto, in the Province of Ontario.

The Board is constituted of six directors holding office for three years.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Robert Miller	President	Edinburgh, Scotland	7th April, 1896	April, 1899
Peter Sturrock	Director	Kilmarnock, "	1st " 1895	" 1898
Hugh Wright	Director	of Altiery, Wigtownshire	5th " 1897	" 1900
Samuel Gunn	Director	Glasgow, Scotland	5th " 1897	" 1900
Andrew Rintoul	Director	" "	7th " 1896	" 1899
Robert Anderson	Director	" "	27th May, 1896	" 1898
J. L. Scarth	Managers in Canada.	Toronto, Ont		
A. Bain		Winnipeg, Man		
James Muirhead	Secretary	Glasgow, Scotland		

A Permanent capital stock : Total amount authorized, $2,433,333.33 ; total amount subscribed, $2,433,333.33, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(b) Fixed and Permanent Capital Stock created by virtue of Joint Stock Companies' Acts or Private Acts.

Description.	No of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.	Total amount remaining unpaid on calls.
		£	$ c.	$ c	$ c.
2. 20 per cent. called	50,000	10	2,433,333 33	486,666 67	None.
4 Paid in anticipation of calls	.....	.....	....	12,288 34	
Totals	50,000	.....	2,433,333 33	498,955 01	

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES OF STOCKHOLDERS OR SHAREHOLDERS.)		
Item No. A.—*Permanent Capital Stock or Shares.*		
2. (*b*) Ordinary joint stock capital, 20 per cent. called : Total called $486 666.67 ; total paid thereon	486,666 67	
3. (*c*) Joint stock capital paid in advance of calls	12,288 34	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	5,115 21	
5. (*e*) Unappropriated profits in respect of (1) (2) or (3)	4 795 32	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	116 800 00	
		625,665 54
C.—LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS OTHER THAN AS ALREADY SHOWN UNDER A. OR B., VIZ. :—		
24. Contingent Fund in respect of property held for sale	.....	19,718 98
		645,384 52
LIABILITIES TO THE PUBLIC.		
27. Deposits	13,262 67	
28. Interest on deposits, due, or accrued or capitalized	557 36	
31. Debentures issued elsewhere than in Canada	723,351 49	
32. Interest due and accrued on (31)	3 512 79	
35. Debenture stock issued elsewhere than in Canada	678,758 86	
36. Interest due and accrued on (35)	4,070 60	
40. Other liabilities to the public, viz. :—		
41. (a) Balance at credit of sundry accounts	5,435 81	
		1,428,949 58
Total actual liabilities	....	2,074,334 10

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing	73,198 42	
6. (*c*) Leasehold land (including buildings) other than foregoing	6,864 36	80,062 78
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	1,426,849 25	
10. (*b*) Debts secured by mortgaged land held for sale in Manitoba and Ontario only	366,212 10	
11. (*c*) Interest due or accrued on items 9 and 10 and on items 14 to 25 and not included therein	73,896 20	1,866,957 55
12. (*d*) Of the debts mentioned in items 9 and 11 the sum of $4,320 is due by directors or officers of the Corporation. (Not extended.)		
C.—*Debts not above Enumerated for which the Corporation holds Securities as follows.*		
14. (*b*) Debts secured by municipal bonds or debentures	1,600 00	
15. (*c*) Debts secured by public school debentures	6,187 90	
22. (*j*) Debts secured by Loan Company's stock	2,911 80	
23. (*k*) Debts secured by railway debentures	24,333 33	
24. (*l*) Debts secured by fen duties	10,950 00	45,983 03
E.—*Cash.*		
31. (*a*) On hand	1,304 17	
32. (*b*) In bank	78,763 85	80,068 02
F.—*Assets Not Hereinbefore Mentioned.*		
37. (*a*) Office furniture	343 19	
38. (*b*) Sundries	919 53	1,262 72
Total of assets owned beneficially by Corporation		2,074,334 10

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Total. (Column 4.)
	I.—Received by the Corporation for its own use.	$ c.
	A.—*Balances from 31st December, 1896.*	
2.	(i) On hand	1,031 95
3.	(ii) In bank	102,257 03
	C.—*Receipts on account of investments, loans or debts.*	
	(*a*) On Mortgages of Realty :—	
10.	(i) Principal	339,270 94
11.	(ii) Interest	
	(*b*) On other securities :—	
13.	(ii) Interest or dividends	1,406 85
	D.—*Receipts from real estate owned beneficially by Corporation.*	
16.	(*a*) Sales (not included in any of foregoing items)	100 00
17.	(*b*) Rents	2,680 27
	F.—*Borrowed money.*	
26.	(*b*) Borrowed by taking deposits	2,508 31
27.	(*c*) Borrowed on debentures	111,544 00
	G.—*Receipts from other sources, viz. :*	
30.	(*a*) Sundries	10,562 01
	Totals	571,361 36

Cash Account.

Expenditure for the year ending 31st December, 1897

Item No.			Total. (Column 4.)
	I. Expended on Corporation Account.		
	A.—*Sums Loaned or Invested on Capital Account.*	$ c.	$ c.
1.	(a) Loaned on Mortgages of Realty (exclusive of mortgages taken on account of lands sold		26,724 96
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock. (*Extend into Column 1*)		19,978 51
	C.—*Borrowed Money (other than foregoing) or interest thereon paid, viz.:*—		
19.	(b) Deposits: Principal, $11,217.66		11,217 66
21.	(d) Debentures issued elsewhere: Principal, $305,226.20; Interest, $34,354.02		340,580 22
23.	(f) Debenture Stock issued elsewhere: Principal, $ ..; Interest, $30,936.83		30,936 83
	D.—*Management Expenses (other than foregoing).*		
25.	(a) Salaries and Fees		9,728 52
26.	(b) Commission or Brokerage		1,749 42
28.	(d) Stationery, Postage, Printing and Advertising, etc		2,560 16
30.	(f) Fuel, Rent, Taxes (other than in 32) and rates		1,451 86
31.	(g) Travelling Expenses		813 40
32.	(h) Insurances and Taxes advanced on property mortgaged to the Corporation		27,308 67
33.	(i) Repairs		12,335 33
	E.—*Other Expenditures, viz.:*		
33.	(a) Sundries		5,907 80
	F.—*Balance.*		
27.	(a) Cash on hand	1,304 17	
	(b) Cash in bank	78,763 85	80,068 02
	Totals		571,361 36

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898? None.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898	99,531 52
3. Amount of other existing obligations of the Corporation which will mature in 1898? None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	101,715 55
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3%; on debentures, 3.87%; on debenture stock, 4.5%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, in Ontario about 6%, in Manitoba about 7%; on other securities, in Manitoba about 7%.	
7 Of the mortgages held by the Corporation, $714,882.29, is on realty situate in Ontario, and $1,152,075.26 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	9,374 68
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No., 9; amount	34,612 43
10. Aggregate market value of the land mortgaged to the Corporation, originally valued at about double the amount of advances, but on account of the general depreciation of land values the estimated value might possibly now not exceed $3,137.858.	
11. How often are securities held by the Corporation valued? At irregular intervals, annually in many cases, in others more frequently if necessary.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? None.	
13. When were the accounts of the Corporation last audited? 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed). D. S. Carson, Glasgow, Scotland; John Maughan, Toronto; T. W. Fisher, Winnipeg.	

THE NORTH OF SCOTLAND CANADIAN MORTGAGE CO., LIMITED.

Head Office, Aberdeen, Scotland.

Chief agency for Ontario: North of Scotland Chambers, No. 18 King street west, Toronto.

Attorneys and agents to receive service and notice under the Loan Corporations Act. (P. of Atty. 16th June, 1897):—Edmund Boyd Osler, Toronto, and Herbert Carlyle Hammond, Toronto, or either of them.

Agents to affix corporate seal to instruments. P. of Atty. 5th April, 1897):—Edmund Boyd Osler, Toronto; Henry James Bethune, Toronto; Allen Bristol Aylesworth, Toronto; William John Franks, Toronto, or any two of them.

Constating Instruments.

The Company was incorporated under the (Imp.) Companies Acts 1862 and 1867 as a Joint Stock Company by Memorandum and Articles of Association both dated 14th December, 1875, and registered on the 17th December, 1875, in the office of the Registrar of Joint Stock Companies for Scotland at Edinburgh.

The said articles were amended by special resolutions of the following dates respectively:

(i.) Passed 29th December, 1876; confirmed 13th January, 1877, increasing the capital of the Company to £500,000 in £10 shares.

(ii.) Passed 15th April, 1878; confirmed 30th April, 1878, increasing the capital of the Company to £750,000 in £10 shares; and amending section 8, clause XIII. (remuneration of directors).

(iii.) Passed 19th August, 1891; confirmed 4th September, 1891, repealing article 27 (respecting transfer book), and substituting new article; also repealing article 52 (respecting general meetings) and substituting new article; also repealing article 82 (7) (respecting power and mode of borrowing); also amending article 83, adding thereto the following provision: "A minute endorsed on the debentures of the Company and signed by the secretary or other officer of the Company duly authorized by the directors for that purpose, shall be sufficient evidence of the terms of renewal of any such debenture."

As to lending and borrowing in Ontario, see the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the North of Scotland Canadian Mortgage Company, Limited, of Aberdeen, Scotland, at the 11th November, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the corporation is at No. 201 Union street, in the City of Aberdeen, in the County of Aberdeen, Scotland.

The chief agency for Ontario is situated at No. 18 King street west, City of Toronto, in the Province of Ontario.

The chief agents and attorneys for Ontario are Messrs. Osler and Hammond, and their address is 18 King street west, Toronto, in the Province of Ontario.

The Board is constituted of six directors holding office for three year. Two directors who are eligible for re-election retiring each year.

The directors and chief executive officers of the Corporation at the 11th November, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
James W. Barclay.. ...	Chairman	London, England	26th Dec., 1896 .	December, 1899.
John Forbes White	Deputy-Chairman.	Dundee, Scotland	26th Dec., 1896 .	" 1899.
William Davidson	Director.....	Blythewood, Inverurie, Scotland	24th Dec., 1894.	" 1897.
James Milne	Director.	Kinaldie, Aberdeen, Scotland	26th Dec., 1895.	" 1898.
James B. Nicolson.....	Director.....	Glenbervie, Kincardineshire, Scotland	26th Dec., 1895.	" 1898.
Alexander M. Ogston...	Director.....	Ardoe, Aberdeen, Scotland	24th Dec., 1894.	" 1897.
William Smith	Secretary	201 Union street, Aberdeen, Scotland.		

A. Permanent capital stock: Total amount authorized, $3,650,000; total amount subscribed, $3,650,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

a.—Fixed and Permanent Capital Stock created by virtue of Building Societies Acts.—

None.

b.—Fixed and Permanent Capital Stock created by virtue of Joint Stock Companies' Acts or Private Acts.

Description.	No. of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		£ sterling.	£ sterling.	£ sterling.
1. Fully called	.....	....	.....	.....
2. 20 per cent. called.....	75,000	750,000	150,000	600,000
Totals..... .	75,000	750,000	150,000	600,000

LIST OF SHAREHOLDERS AS AT 11TH NOVEMBER, 1897.

(Not printed.)

Balance Sheet as at 11th November, 1897.

Capital and Liabilities.

Dr.

		$ c.	$ c.
	Capital (Liabilities to Stockholders or Shareholders.)		
Item No.	A.—*Permanent Capital Stock or Shares.*		
2.	(*b*) Ordinary joint stock capital, 20% called: Total called, $730,000; total paid thereon	730,000 00	
4.	(*d*) Dividends declared in respect of (2), but not yet paid	36,500 00	
5.	(*e*) Unappropriated profits in respect of (2)	9,644 00	
6.	(*f*) Reserve fund in respect of (2)	403,933 33	
	Special Reserve Fund incidental to optional redemption of debenture stock	13,447 64	1,193,524 97
	C.—*Liabilities to Stockholders or Shareholders other than as already shown under A. or B., viz.:*		
24.	Unclaimed dividends, £47.12.0		231 65
			1,193,756 62
	Liabilities to the Public.		
31.	Deposit receipts and debentures issued elsewhere than in Canada	1,479,111 38	
35.	Debenture stock issued elsewhere than in Canada	1,440,888 58	
40.	Other liabilities to the public, viz.:		
41.	(a) Unclaimed interest, Aberdeen, £11.11.4	56 29	
42.	(b) Accruing income tax, Aberdeen, £1,303.7.11	6,346 20	
43.	(c) Interest accrued, Aberdeen, £9.3.9	44 71	2,926,444 16
	Total actual liabilities		4,120,200 78

Balance Sheet as at 11th November, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—Immovable Property Owned Beneficially by Corporation.		
1. (*a*) Office premises situate as follows:		
2. (i) At Aberdeen, Scotland, held in freehold	63,266 66	
3. (ii) At Toronto, held in freehold	68,133 33	
		131,399 99
B.—Debts secured by Mortgages of Land.		
9. (*a*) Debts (other than item 10) secured by mortgages of land (Principal).	3,651,910 26	
10. (*b*) Debts secured by mortgaged land held for sale (Principal)	50,182 06	
11. (*c*) Interest due or accrued on item 9 only and not included therein	161,572 27	
12. (*d*) Of the debts mentioned in items 9, 10 and 11 the sum of $35,962.12 is due by directors or officers of the Corporation. (Not extended).		3,863,664 59
C.—Debts not above enumerated for which the Corporation holds securities as follows:		
14. (*b*) Debts secured by municipal bonds or debentures 15. (*c*) Debts secured by public school debentures } and other Bonds	101,252 07	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	3,708 19	
		104,960 26
E.—Cash.		
31. (*a*) On hand	24 51	
32. (*b*) In banks	15,114 97	
		15,139 48
F.—Assets not hereinbefore mentioned.		
37. (*a*) Office furniture, Toronto 38. (*b*) " Winnipeg }	1,443 33	
39. (*c*) " Aberdeen	1,460 00	
40. (*d*) Rent charges paid Aberdeen applicable next year	135 88	
41 (*e*) Rent overdue Toronto	256 25	
42. (*f*) Insurance premiums and taxes due by mortgagors	1,741 00	
		5,036 46
Total of assets owned beneficially by Corporation		4,120,200 78

Cash Account.

Receipts for the year ending 11th November, 1897, in Ontario only.

		Amount carried to earnings, maintenance or contingent account. (Column 1)	Total. (Column 4.)
	I.—Received by the Corporation for its own use.	$ c.	$ c.
	A.—*Balances from 11th November, 1896.*		
Item No. 3.	(ii) In bank	71,364 45	71,364 45
	C.—*Receipts on account of investments, loans or debts.*		
	(a) On Mortgages of Realty:—		
10.	(i) Principal	176,726 17	
11.	(ii) Interest on Nos. 10 and 12	105,926 10	
	(b) On other securities, :		
12.	(i) Principal	410,623 50	693,275 77
	D.—*Receipts from real estate owned beneficially by Corporation.*		
17.	(b) Rents		6,427 91
	E.—*Miscellaneous.*		
19.	(b) Premium or bonus on loans		133 74
	G.—*Receipts from other sources, viz.* :		
30.	(a) Received from Home office, Scotland	49,807 79	
	(b) " branch office, Winnipeg	119,429 73	
	(c) Exchange	733 51	169,976 03
	Totals		941,177 90

Cash Account.

Expenditure for the year ending 11th November, 1897, in Ontario only.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c.
A.—*Sums Loaned or Invested on Capital Account.*		
Item No. 1. (*a*) Loaned on Mortgages of Realty	186,075 92	
(*b*) Loaned or invested in other securities, viz. :—		
2. (i) Bonds, etc.	384,363 50	
3. (ii) Expended on office premises	133 00	570,572 42
D.—*Management Expenses (other than foregoing).*		
25. (*a*) Salaries and fees	8,844 95	
26. (*b*) Commission, or brokerage	1,592 08	
28. (*d*) Stationery, postage, printing and advertising	921 11	
29. (*e*) Law costs	223 32	
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	1,705 00	
31. (*g*) Travelling expenses	882 86	14,169 32
E.—*Other Expenditures, viz.* :		
33. (*a*) Transmitted to Home Office, Scotland	252,215 95	
34. (*b*) " branch office, Manitoba	90,311 84	
35. (*c*) Current expenditure in respect Company's buildings	2,978 95	
36. (*d*) Inspector's salary, $2,500 ; exchange, $96.20 ; income tax, $684.45	3,280 65	348,787 39
F.—*Balance.*		
37. (*b*) Cash in bank		7,442 52
38. (i) Rent overdue		206 25
Totals		941,177 90

Miscellaneous Statement for the Year Ending 11th November, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898	432,787 79
3. Amount of other existing obligations of the Corporation which will mature in 1898. None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	473,112 43
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits and debentures, about 3.4%; on debenture stock, about 3.9%.	
6. Average rate of interest per annum received by the Corporation as on 11th Nov., 1897, on Mortgages of Realty and on other securities, 6.54%.	
7. Of the mortgages held by the Corporation $1,815,489.21 is on realty situate in Ontario, and $1,836,421.05 is on realty situate elsewhere	3,651,910 26
8. Loans written off or transferred to real estate account during 1897	11,773 21
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No., 59; amount	61,909 83
11. How often are the securities held by the Corporation valued? Book value made annually, land securities are valued continuously.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? None.	
13. When were the accounts of the Corporation last audited? 11th November, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed)? William Milne, Chartered Accountant; Messrs. James Meston & Co., Chartered Accountants, Aberdeen, Scotland.	

THE ONTARIO BUILDING AND SAVINGS SOCIETY.

Head Office, Kingston, Ontario.

Incorporated under the Building Societies' Act, Consol. Stat. U. C., chap. 53, by declaration filed with the Clerk of the Peace for the County of Frontenac, on the 26th June, 1874.

The lending and the borrowing powers are governed by the Loan Corporations Act, R.S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Ontario Building and Savings Society of Kingston, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 67 Clarence street, in the City of Kingston, in the Province of Ontario.

The Board is constituted of nine directors, holding office for three years.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
C. V. Price	President	Kingston	March, 1895	March, 1898
Edwin Chown	Vice-President	"	" 1896	" 1899
Benjamin W. Folger	Director	"	" 1895	" 1898
James McArthur	Director	"	" 1895	" 1898
Richard Waldron	Director	"	" 1896	" 1899
Leonard Clements	Director	"	" 1896	" 1899
B. M. Britton, M.P	Director	"	" 1897	" 1900
I. A. Breck	Director	"	" 1897	" 1900
Nathan F. Dupuis	Director	"	" 1897	" 1900
James McArthur	Manager Secretary	"	17th July, 1874	

A. Permanent capital stock: total amount authorized, $250,000; total amount subscribed, $250,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a)—*Fixed and permanent capital stock created by virtue of Building Society Acts.*—

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	——		
		$	$ c.	$ c.	$ c.
1. Fully paid	5,000	50	250,000 00	250,000 00	None.
Totals.....	5,000	50	250,000 00	250,000 00	None.

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

——	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
A.—*Permanent Capital Stock or Shares.*		
Item No.		
1. (a) Ordinary joint stock capital fully called: total called, $250,000; total paid thereon	250,000 00	
4. (d) Dividends declared in respect of (1), but not yet paid	6,311 25	
7. (g) Contingent fund in respect of (1)	15,742 09	272,053 34
LIABILITIES TO THE PUBLIC.		
27. Deposits.....	219,149 82	
28. Interest on deposits, due, or accrued or capitalized (included in 27)		
40. Other liabilities to the public, viz.:		
41. (a) Commission on loans	46 00	219,195 82
Total actual liabilities	.....	491,249 16

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable property owned beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing		5,671 95
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	312,593 46	
10. (*b*) Debts secured by mortgaged land held for sale	27,636 38	
11. (*c*) Interest due or accrued on items 9 or 10 and not included therein	8,012 68	348,242 52
C.—*Debts not above Enumerated for which the Corporation holds Securities as follows.*		
14. (*b*) Debts secured by municipal bonds or debentures	5,217 36	
20. (*h*) Debts secured only by permanent stock or shares of the Corporation	13,572 57	
22. (*j*) Debts secured by other debentures	14,176 18	
23. (*k*) " " "	21,000 00	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	317 52	54,283 63
E.—*Cash.*		
31. (*a*) On hand	86 81	
32. (*b*) In bank	42,252 68	42,339 49
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) City of Kingston debentures	26,914 17	
38. (*b*) Township of Hinchinbrook debentures	160 00	
39. (*c*) Accrued interest on funds in bank	114 58	
40. (*d*) Rents not at present collectable, taxes, insurance premiums, etc	741 46	
41. (*e*) Office furniture	86 57	
42. (*f*) Deposit Agricultural Savings and Loan Co., London	12,754 79	40,711 57
Total of assets owned beneficially by Corporation		491,249 16

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Total. (Column 4.)
	I.—Received by the Corporation for its own use.	
	A.—*Balances from 31st December, 1896.*	$ c.
	(*b*) Cash (not already shown under (1)).	
2.	(i) On hand	85 25
3.	(ii) In bank	38,791 88
	(iii) Bank interest	1,690 49
	C.—*Receipts on Account of Investments, Loans or Debts.*	
	(*a*) On Mortgages of Realty :	
10.	(i) Principal	70,127 88
11.	(ii) Interest	
	(*b*) On other Securities	
12.	(i) Principal	29,465 43
13.	(ii) Interest or dividen	
	F.—*Borrowed Money.*	
26.	(*b*) Borrowed by taking deposits	258,860 29
	G.—*Receipts from other sources, viz.:*	
30.	(*a*) Transfer fees	7 00
	Totals	399,028 22

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	$ c.	$ c.
I.—Expended on Corporation Account.		
A.—*Sums Loaned or Invested on Capital Account.*		
Item No. 1. (*a*) Loaned on Mortgages of Realty		49,036 94
(*b*) Loaned or invested in other Securities, viz:—		
2. (i) Loans secured by stock		11,340 00
3. (ii) Loans secured by debentures		14,752 00
B.—*Expended on Stock Account.*		
8. Dividends paid on permanent stock. (*Extend into column 1*), including dividends not previously claimed		12,562 50
C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*		
19. (*b*) Deposits: Principal, and interest, not paid separately		265,566 93
D.—*Management Expenses (other than foregoing).*		
25. (*a*) Salaries and fees	2.367 00	
26. (*b*) Commission or brokerage	61 50	
28. (*d*) Stationery, postage, printing and advertising	115 70	
29. (*e*) Law costs	73 56	
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	546 05	
31. (*g*) Travelling expenses	100 90	
32. (*h*) Sundries, including Registration Fees	79 94	3,344 65
E.—*Other Expenditures, viz.:*—		
33. (*a*) Insurance Premiums, etc		85 71
F.—*Balance.*		
37. (*a*) Cash on hand	86 81	
(*b*) Cash in bank	42,252 68	42,339 49
Totals		399,028 22

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898. One debenture	50 00
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3½ and 3%; on debentures, none; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5 to 6%; on other securities, 4 to 6%.	
7. Of the mortgages held by the Corporation, all are on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897.	9,179 42
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897. No. 8; amount	21,616 46
10. Aggregate market value of the land mortgaged to the Corporation	512,900 00
11. How often are the securities held by the Corporation valued? From time to time as occasion arises.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager and Secretary-Treasurer, $2,000; Accountant, $1,500.	
13. When were the accounts of the Corporation last audited? 21st February, 1898.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed), Joseph E. Clark and Wm. Neish, Kingston, Ont.	

THE ONTARIO LOAN AND DEBENTURE COMPANY.

Head Office, London, Ont.

Incorporated under Building Societies Act, R. S. O. 1877, c. 164, by declaration filed in the Office of the Clerk of the Peace for the County of Middlesex, 26th September, 1879. The original corporate name was The Ontario Savings and Investment Society.

By Order in Council of Ontario, dated 4th October, 1879, and also by Order in Council of Canada, dated 29th October, 1879, the corporate name was changed to The Ontario Loan and Debenture Company.

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Ontario Loan and Debenture Company, of London, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 139 Dundas street, in the City of London, in the Province of Ontario.

The Board is constituted of five directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
John McClary	President	London, Ont	10th February, 1897	9th February, 1898.
Arthur S. Emery	Vice-President	"	"	"
Wm. Bowman	Director	"	"	"
Wm. McDonough	Director	"	"	"
Wm. A. Gunn	Director	"	"	"
Wm. F. Bullen	Manager and Secretary-Treasurer	"	14th July, 1871	

A. Permanent capital stock: total amount authorized, not limited; total amount subscribed, $2,000,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*a*).—*Fixed and permanent capital stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st Dec., 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	——		
		$ c.	$ c.	$ c.	$ c.
1. Fully paid	40,000	50 00	2,000,000 00	1,200,000 00	800,000 00
Totals	40,000	50 00	2,000,000 00	1,200,000 00	800,000 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

——	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.– *Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: Total called, $1,000,000; total paid thereon	1,000,000 00	
2. (*b*) Ordinary joint stock capital, 20% called: Total called, $200,000; total paid thereon	200,000 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid.	39,000 00	
5. (*e*) Unappropriated profits in respect of (1), (2) or (3).	9,310 67	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	480,000 00	
		1,728,310 67
LIABILITIES TO THE PUBLIC.		
27. Deposits, including interest	558,418 28	
29. Debentures issued and payable in Canada	213,688 00	
30. Interest due and accrued on (29)	2,888 04	
31. Debentures issued in Canada but payable elsewhere	1,446,769 85	
32. Interest due and accrued on (31)	13,520 65	
		2,235,284 82
Total actual liabilities		3,963,595 49

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows:—		
2. (i) At London, Ont., held in freehold	72,000 00	
5. (*b*) Freehold land (including buildings) other than foregoing	33,033 82	
		105,033 82
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	3,279,511 21	
10. (*b*) Debts secured by mortgaged land held for sale	113,427 79	
		3,392,939 00
C.—*Debts not above Enumerated for which the Corporation Holds Securities as Follows:*		
14. (*b*) Debts secured by Municipal Bonds or Debentures	22,209 47	
16. (*d*) Debts secured by Loan Corporations' Debentures	8,230 75	
20. (*h*) Debts secured only by Permanent Stock or Shares of the Corporation.	53,794 74	
		84,234 96
E.—*Cash.*		
32. (*b*) In banks		381,387 71
Total of assets owned beneficially by Corporation		3,963,595 49

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Total. Column 4.
	I.—Received by the Corporation for its own use.	
	A.—*Balances from 31st December, 1896.*	$ c.
	(*b*) Cash (not already shown under (1)) :—	
3.	(ii) In bank	322,469 28
	C.—*Receipts on Account of Investments, Loans or Debts.*	
	(*a*) On Mortgages of Realty :—	
10.	(i) Principal	772,026 82
11.	(ii) Interest	
	(*b*) On other Securities :—	
12.	(i) Principal	120,602 60
13.	(ii) Interest or dividends	
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*	
17.	(*b*) Rents	2,481 25
	F.—*Borrowed Money.*	
26.	(*b*) Borrowed by taking deposits	611,904 84
27.	(*c*) Borrowed on debentures	435,048 99
	Totals	2,264,533 78

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c.	$ c.
A.—*Sums Loaned or Invested on Capital Account.*			
Item No. 1. (*a*) Loaned on Mortgages of Realty	.....	432,862 69	432,862 69
(*b*) Loaned or invested in other Securities, viz.:			
(i) Debentures	.....	8,230 75	8,230 75
(ii) On the Company's stock	.....	17,193 00	17,193 00
B.—*Expended on Stock Account.*			
8. Dividends paid on permanent Stock. (*Extend into Column 1*)	78,000 00	.....	78,000 00
C.—*Borrowed Money (other than foregoing) or Interest thereon Paid, viz.:*			
19. (*b*) Deposits: Principal, $577,095.85: Interest, $20,476.90	20,476 90	577,095 85	597,572 75
20. (*c*) Debentures issued in Canada: Principal, $16,000.00; Interest, $8,856.79	8,856 79	16,000 00	24,856 79
21. (*d*) Debentures issued elsewhere: Principal, $635,275.18; Interest, $62,531.81	62,531 81	635,275 18	697,806 99
D.—*Management Expenses (other than foregoing).*			
35. (*a*) Salaries and fees	11,177 79		
26. (*c*) Commission or Brokerage	6,938 57		
28. (*d*) Stationery, Postage, Printing and Advertising	1,869 79		
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	1,976 43		
31. (*g*) Travelling expenses, $1,660.52; inspectors' salaries, $3,000	4,660 52		26,623 10
F.—*Balance.*			
(*b*) Cash in various banks	.....	381,387 71	381,387 71
Totals	.....	.....	2,264,533 78

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of Debentures issued by the Corporation in Canada which will mature in 1898	15,900 00
2. Amount of Debentures issued by the Corporation in Canada but payable elsewhere, which will mature in 1898	280,149 67
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	738,517 44
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3.78%; on debentures, 3.89 %.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5.82 %; on other securities, 5.18 %.	
7. Of the mortgages held by the Corporation $3,339,492.14 is on realty situate in Ontario, and $53,446 86 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897. Amount written off loans during 1897	9,207 55
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1896? No, 29; amount $92,026.47.	
10. Aggregate market value of the land mortgaged to the Corporation, $6,870,800.	
11. How often are the securities held by the Corporation valued? Half-yearly or oftener if required.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager, $5,000; inspector, $2,000; inspector, $2,000; accountant, $5,000; teller, $5,000; clerk, $2,000; three clerks, each $1,000.	
13. When were the accounts of the Corporation last audited? January, 1898 up to December, 31, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). Geo. F. Jewell, F. C. A., London, Ont.; A. M. Smart, London, Ont.	

THE ONTARIO LOAN AND SAVINGS COMPANY.

Head Office, Oshawa, Ont.

Incorporated under the Building Societies Act, Consol. Stat. U. C chap. 53, by declaration filed with the Clerk of the Peace for the County of Ontario on 12th February, 1873.

The lending and the borrowing powers are governed by the Loan Corporations Act, R.S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Ontario Loan and Savings Company of Oshawa, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the corporation is in the town of Oshawa in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
W. F. Cowan	President	Oshawa	16th Feb'y, 1897.	16th Feb'y. 1898.
W. F. Allen	Vice-President	Bowmanville	" "	" "
John Cowan	Director	Oshawa	" "	" "
R. S. Hamlin	Director	"	" "	" "
Thomas Paterson	Director	Bowmanville	" "	" "
Wm. Brien	Director	Trillick, Ireland	" "	" "
Jas. A. Gibson	Director	Oshawa	" "	" "
T. H. McMillan	Manager / Secretary	"	" "	" "

A. Permanent capital stock: total amount authorized, $300,000; total amount subscribed, $300,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*a*) *Fixed and Permanent Capital Stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st December, 1897,			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value.	——		
		$	$ c.	$ c.	$ c.
Fully paid	6,000	50	300,000 00	299,430 53	569 47
Totals.....	6,000	.....	300,000 00	299,430 53	569 47

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

——	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
A.—*Permanent Capital Stock or Shares.*		
Item No.		
1. (*a*) Ordinary joint stock capital fully called: total called, $300,000; total paid thereon....	299,430 53	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	75,000 00	
7. (*g*) Contingent fund in respect of (1), (2) or (3).....	23,000 00	397,430 53
LIABILITIES TO THE PUBLIC.		
27. Deposits.....	265,403 10	
29. Debentures issued in Canada	244,900 00	510,303 10
Total actual liabilities	.....	907,733 63

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :—		
2. (i) At Oshawa, held in freehold	11,000 00	
5. (*b*) Freehold land (including buildings) other than foregoing	42,000 00	53,000 00
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	727,942 61	
10. (*b*) Debts secured by mortgaged land held for sale	38,000 00	765,942 61
C. *Debts not above enumerated for which the Corporation holds Securities as follows :*		
20. (*h*) Debts secured only by Permanent Stock or Shares of the Corporation		5,293 95
E.—*Cash.*		
31. (*a*) On hand	109 60	
32. (*b*) In banks	59,053 39	59,162 99
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture	400 00	
38. (*b*) 93 shares Western Bank Stock " 'owned' but held in trust for Co'y."	10,912 00	
39 (*c*) 220 shares Ontario Loan and Saving Co. Stock held in trust for Co'y.	13,022 08	24,334 08
Total of assets owned beneficially by Corporation		907,733 63

Cash Account.

Receipts for the year ending 31st December, 1897.

	Total. (Column 4.)
	$ c.
I. Received by the Corporation for its own use.	
A.—*Balances from 31st December, 1896.*	
Item No. 1. (*a*) Balance	11,503 34
C.—*Receipts on account of investments, loans or debts.*	
(*a*) On Mortgages of Realty :	
10. (i) Principal	41,029 30
11. (ii) Interest	45,000 00
(*b*) On other securities :	
13. (ii) Interest or dividends	322 75
D.—*Receipts from Real Estate owned beneficially by Corporation.*	
17. (*b*) Rents	2,332 07
F.—*Borrowed Money.*	
25. (*a*) Interest on bank account	100 19
26. (*b*) Borrowed by taking deposits	183,012 80
27. (*c*) Borrowed on Debentures	231,600 00
Totals	514,900 45

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
1.—Expended on Corporation Account.	$ c.	$ c.
A.—*Sums Loaned or Invested on Capital Account.*		
Item No. 1. (*a*) Loaned on Mortgages of Realty	41,211 76	
(*b*) Loaned or invested in other Securities	9,332 50	50,544 26
B.—*Expended on Stock Account.*		
8. Dividends paid on permanent stock		17,965 80
C.—*Borrowed Money (other than foregoing) or Interest Thereon paid, viz.:*		
18. (*a*) Bank account (principal)	964 92	
19. (*b*) Deposits: Principal, $178,949.05; interest, $10,027.30	188,976 35	
20. (*c*) Debentures issued in Canada: Principal, $231,300; interest, $10,077.50	241,377 50	431,318 77
D.—*Management Expenses (other than foregoing):*		
25. (*a*) Salaries and fees, including directors' and auditors' fees and caretaker	4,730 00	
26. (*b*) Commission or brokerage	47 00	
28. (*d*) Stationery, postage, printing and advertising	299 83	
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	350 83	
32. (*h*) Insurances or taxes advanced on property mortgaged to the Corporation	375 97	5,803 63
E.—*Other Expenditures, viz.:*		
33. (*a*) Registration fee		105 00
F.—*Balance.*		
37. (*a*) Cash on hand	109 60	
(*b*) Cash in various banks	9,053 39	9,162 99
Totals		514,900 45

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	2,000 00
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898, none.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. Deposits only which are subject to notice of withdrawal.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898, about	40,000 00
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, about 3½ per cent.; on debentures, about 4⅜ per cent.; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, about 5¼ per cent.; on other securities, 6 per cent.	
7. Of the mortgages held by the Corporation $727,942.61 is on realty situate in Ontario, and $.....is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	22,000 00
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897. No. 5 ; amount	11,836 42
10. Aggregate market value of the land mortgaged to the Corporation, $2,000,000 about.	
11. How often are the securities held by the Corporation valued? Once a year.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Accountant, $3,000 ; teller, $2,500.	
13. When were the accounts of the Corporation last audited? 15th February, 1898.	
14. Names and addresses of the auditors respectively for 1897 and 1898 : J. P. Owens and P. H. Punshon, Oshawa.	

THE OXFORD PERMANENT LOAN AND SAVING SOCIETY.

Head Office, Woodstock, Ontario.

Incorporated under the Building Societies' Act, Consol. Stat. U. C., chapter 53, by declaration filed with the Clerk of the Peace for the County of Oxford, on the 27th October, 1865. (Decl. Book I, 25). The original corporate name was "The Oxford Permanent Building and Savings Society.

By Order in Council of Ontario, dated 23rd September, 1878, the corporate name was changed to The Oxford Permanent Loan and Savings Society.

The borrowing and the lending powers are governed by the Loan Corporations Act, R.S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Oxford Permanent Loan and Savings Society of Woodstock, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 388 Dundas street, in the Town of Woodstock, in the Province of Ontario.

The Board is constituted of eight directors holding office for two years.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
H. P. Brown	President	Woodstock	27th February, 1896	24th February, 1898
John White	Vice-President	"	"	"
James S. Scarff	Director	"	"	"
William Dease	Director	"	"	"
William Grey	Director	"	25th " 1897	23rd February, 1899
T. H. Parker	Director	"	"	"
James White	Director	"	"	"
M. Douglas	Manager	"	"	"
Charles L. Beard	Secretary-Treas.	"	Organization of Society.	

A. Permanent capital stock: total amount authorized, $270,000; total amount subscribed, $270,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—*Fixed and permanent capital stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value.	—		
		$	$ c.	$ c.	$ c.
1. Fully paid	5,400	50 00	270,000 00	240,109 34	29,890 66
Totals	5,400	50 00	270,000 00	240,109 34	29,890 66

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

Item No.	—	$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	A.—*Permanent Capital Stock or Shares.*		
1.	(a) Ordinary joint stock capital fully called: total called $234,200; total paid thereon	232,984 34	
2.	(b) Ordinary joint stock capital 20 per cent. called: total called $7,160; total paid thereon	7,125 00	
4.	(d) Dividends declared in respect of (1), (2) or (3), but not yet paid	7,274 49	
6.	(f) Reserve fund in respect of (1), (2) or (3)	26,500 00	
7.	(g) Contingent fund in respect of (1), (2) or (3)	500 00	
			274,383 83
	LIABILITIES TO THE PUBLIC.		
27.	Deposits	215,452 37	
28.	Interest on deposits, due, or accrued or capitalized	8,336 16	
29.	Debentures issued in Canada	79,690 00	
30.	Interest due and accrued or capitalized on (29)	3,499 18	
40.	Other liabilities to the public, viz.:—		
41.	(a) current accounts	103 47	
			307,081 18
	Total actual liabilities		581,465 01

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows:—		
2. (i) At Woodstock, held in freehold		7,500 00
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	494,055 84	
10. (*b*) Debts secured by mortgaged land held for sale	13,647 29	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein, principally accrued	22,088 68	
		529,791 81
C.—*Debts not above enumerated for which the Corporation holds securities as follows:*		
16. (*d*) Debts secured by Loan Corporations' debentures	10,000 00	
20. (*h*) Debts secured only by permanent stock or shares of the Corporation	5,910 80	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	313 25	
		16,224 05
E.—*Cash.*		
31. (*a*) On hand	1,894 26	
32. (*b*) In bank	25,547 55	
		27,441 81
F.—*Assets not Hereinbefore Mentioned.*		
37. (*a*) Furniture	175 00	
38. (*b*) Rents office building, due and accrued	332 34	
		507 34
Total of assets owned beneficially by Corporation		581,465 01

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Permanent capital, including reserve. (Column 3.)	Total. Column 4.
	I.—Received by the Corporation for its own use.	$ c.	$ c.
	A.—*Balances from 31st December, 1896.*		
	(*b*) Cash (not already shown under (1)) :—		
2.	(i) On hand		1,565 19
3.	(ii) In bank		5,230 79
	B.—*Sums received wholly or partly on Capital Stock.*		
4.	(*a*) Calls on joint stock permanent capital	5,369 88	
5.	(*b*) Premiums on (4)	1,335 00	6,704 88
	C.—*Receipts on account of Investments, Loans or Debts.*		
	(*a*) On Mortgages of Realty :		
10.	(i) Principal		45,105 18
11.	(ii) Interest		28,064 31
	(iii) Instalments		3,294 66
	(iv) Rents carried to mortgage account		1,702 02
	(*b*) On other securities :		
12.	(i) Principal (stock loans)		2,072 70
13.	(ii) Interest or dividends		518 63
	D.—*Receipts from real estate owned beneficially by Corporation.*		
16.	(*a*) Sales (not included in any of foregoing items)		93 72
17.	(*b*) Rents		413 85
	E.—*Miscellaneous.*		
18.	(*a*) Commission, brokerage (or remuneration as corporate agent, trustee, etc)		9 00
	F.—*Borrowed Money.*		
26.	(*b*) Borrowed by taking deposits		303,489 66
27.	(*c*) Borrowed on debentures		44,190 00
	G.—*Receipts from other sources, viz.:*		
30.	(*a*) Bank interest		648 35
	(*b*) Insurance		173 23
	(*c*) Sundry receipts pertaining to mortgaged property		1,400 91
	Totals		444,677 08

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance, or contingent account. (Column 1).	Total. (Column 4).
	I.—Expended on Corporation Account.	$ c.	$ c.
	A.—*Sums loaned or invested on Capital Account.*		
1.	(*a*) Loaned on Mortgages of Realty		77,304 68
	(*b*) Loaned or invested in other securities, viz.:		
2.	(i) On fully paid stock of this Corporation		123 50
3.	(ii) Loan Company's debenture		10,000 00
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock. (*Extend into column 1*)	14,133 21	14,133 21
	C.—*Borrowed money (other than foregoing) or interest thereon paid, viz.:*		
18.	(*a*) Bank account (principal and interest)		21 97
19.	(*b*) Deposits: Principal, $295,468.46; interest, $251.31		295,719 77
20.	(*c*) Debentures issued in Canada: Principal, $13,059.91; interest, $1,506.45		14,566 36
	D.—*Management Expenses (other than foregoing).*		
25.	(*a*) Salaries and fees		1,856 00
26.	(*b*) Commission or brokerage		158 88
28.	(*d*) Stationery, postage, printing and advertising		328 92
29.	(*e*) Law costs		25 00
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates		332 16
32.	(*h*) Insurances or taxes advanced on property mortgaged to the Corporation		985 20
	E.—*Other Expenditures, viz.:*		
33.	(*a*) Registration fee		106 00
34.	(*b*) Furniture and repairs to office buildings		154 90
35.	(*c*) Sundry payments pertaining to mortgaged premises		1,418 72
	F.—*Balance.*		
37.	(*a*) Cash on hand	1,894 26	
	(*b*) Cash in bank	25,547 55	27,441 81
	Totals		444,677 08

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	11,300 00
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	72,735 09
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3.81 %; on debentures, 4.32 %.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6.05 %; on other securities, 5.257 %.	
7. Of the mortgages held by the Corporation $529,791.81 is on realty situate in Ontario and none on realty situate elsewhere.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No, 3; amount	2,362 39
10. Aggregate market value of land mortgaged to the Corporation	938,812 09
11. How often are the securities held by the Corporation valued? Half-yearly by the Manager, yearly by the Directors.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Treasurer $500.00 in addition to $1,000 of stock fully paid up.	
13. When were the accounts of the Corporation last audited? January, 1898.	
14. Names and address of the auditors respectively for 1897? George White and W. H. Van Ingen, Woodstock, Ont.	

THE PEOPLES' LOAN AND DEPOSIT COMPANY.

Head Office, Toronto, Ontario.

Incorporated under the Building Societies Act (Consol. Stat. U. C., chap. 53) by declaration filed with the Clerk of the Peace for the County of York, 18th February, 1875.

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O., 1897, c. 205.

Annual Statement

Of the condition and affairs of the Peoples' Loan and Deposit Company of Toronto, at the 31st December, 1897, and for the year ending on that day.

The head office of the Corporation is at No. 41 Adelaide street east, in the City of Toronto, in the Province of Ontario.

The Board is constituted of six directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Hon. J. C. Aikens	President	Toronto	8th Feb'y, 1897	14th Feb'y, 1898.
Dr. James Carlyle	Vice-President	"	"	"
John Aikens	Director	Brampton	"	"
Dr. J. C. Patton	Director	Toronto	"	"
Bernard Saunders	Director	"	"	"
Ferguson J. Dunbar	Director	"	"	"
Samuel W. Black	Manager / Secretary	"	4th Sept., 1895	

A. Permanent capital stock: Total amount authorized, $600,000; total amount subscribed, $600,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	—		
			$ c.	$ c.	$ c.
1. Fully called	12,000	$50.	600,000 00	600,000 00	.....
Totals	12,000	....	600,000 00	600,000 00	.....

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

CR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: total called, $600,000; total paid thereon	600,000 00	
6 (*f*) Reserve Fund in respect of (1), (2) or (3)	40,000 00	
7. (*g*) Contingent Fund in respect of (1), (2) or (3)	10,722 76	
		650,722 76
LIABILITIES TO THE PUBLIC.		
27. Deposits	107,047 00	
28. Interest on deposits, due, or accrued or capitalized		
29. Debentures issued in Canada	229,158 38	
30. Interest due and accrued on (29)	2,733 91	
31. Debentures issued elswhere than in Canada	2,676 66	
32. Interest due and accrued on (31)	14 67	
37. Owing to Banks (including interest due or accrued)	6,304 71	
40. Other liabilities to the public, viz:		
41. (a) Borrowed on Mortgages	28,000 00	
42. (b) Interest on Mortgages	191 67	376,127 60
Total actual liabilities		1,026,849 76
CONTINGENT LIABILITIES.		
48. Money for which the Corporation is contingently liable, viz:		
49. (a) Principal guaranteed, Mortgages sold and guaranteed	7,750 00	
Total contingent liabilities	7,750 00	7,750 00
Gross total liabilities, actual and contingent		1,034,599 76

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than (1)	126,341 73	126,341 73
B.—*Debts Secured by Mortgages on Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	657,704 56	
10. (*q*) Debts secured by mortgaged land held for sale	230,051 42	887,755 98
C.—*Debts not above Enumerated for which the Corporation Holds Securities as follows.*		
20. (*h*) Debts secured only by permanent stock or shares of the Corporation		10,452 90
D.—*Unsecured debts.*		
27. (*a*) Notes		280 47
E.—*Cash.*		
31. (*a*) On hand	1,178 36	
32. (*b*) In bank	120 56	1,298 92
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Furniture and fixtures	500 00	
38. (*b*) Sundry accounts	219 76	719 76
Total of assets owned beneficially by Corporation		1,026,849 76
II.—Assets not Owned Beneficially by Corporation but for which the Corporation is Accountable.		
A.—*As Guarantor.*		
(*a*) Mortgage securities :—		
43. (1) Principal	7,750 00	
Total of Assets II	7,750 00	7,750 00
Gross total of Assets I. and II		1,034,599 76

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Total. (Column 4.)
	I.—Received by the Corporation for its own use.	
	A.—*Balance from 31st December, 1896.*	$ c.
	(*b*) Cash (not already shown under (1)):—	
2.	(i) On hand	447 55
3.	(ii) In bank	1,999 82
	C.—*Receipts on Account of Investments, Loans or Debts.*	
	(*a*) On Mortgages of Realty:—	
10.	(i) Principal	47,195 26
11.	(ii) Interest	42,115 89
	(*b*) On other securities:—	
12.	(i) Principal	607 00
13.	(ii) Interest or dividends	158 88
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*	
16.	(*a*) Sales (not included in any of foregoing items)	2,600 00
17.	(*b*) Rents	7,279 43
	F.—*Borrowed Money.*	
25.	(*a*) Bank or other advances, discounts or overdrafts	6,304 71
26.	(*b*) Borrowed by taking deposits	135,445 32
27.	(*c*) Borrowed on debentures	46,358 38
29.	(*e*) Borrowed otherwise, viz.:—On mortgages	23,000 00
	G.—*Receipts from Other Sources, viz.*:—	
30.	(*a*) Sundries	418 72
	Totals	313,950 96

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
I.—Expended on Corporation Account.		
A.—Sums Loaned or Invested on Capital Account.	$ c.	$ c.
Item No. 1. (*a*) Loaned on Mortgages of Realty (including item 7 (*e*) if no separate account therefor)		48,857 91
6. (*c*) Real Estate purchased		1,500 00
7. (*d*) Incumbrances on Realty paid off		9,000 00
C.—Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:		
18 (*a*) Bank account (interest)		197 65
19. (*b*) Deposits: Principal ; Interest		130,897 77
20. (*c*) Debentures issued in Canada: Principal, $69,999.90; Interest, $12,218.21		82,218 11
21. (*d*) Debentures issued elsewhere: Principal, $31,390.00; Interest, $1,432 00		32,822 00
D.—Management Expenses (other than foregoing).		
25. (*a*) Salaries and fees		4,800 00
28. (*d*) Stationery, postage, printing, advertising, etc		721 02
29. (*e*) Law Costs		475 91
30. (*f*) Fuel, rent, taxes (other than in 32) rates and registration fee		706 75
31. (*g*) Travelling expenses		17 10
32. (*h*) Insurances or taxes advanced on property mortgaged to the corporation (included in No 1)		
E.—Other Expenditures, viz.:		
33. (*a*) Debenture expenses		32 02
34. (*b*) Sundry expenses and furniture		85 80
35. (*c*) Interest on money borrowed on mortgages paid		300 00
F.—Balance.		
37. (*a*) Cash on hand	1,178 36	
(*b*) Cash in bank	120 56	
		1,298 92
Totals		313,930 96

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	68,001 90
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898 £300 sterling	1,460 00
3. Amount of other existing obligations of the Corporation which will mature in 1898	5,000 00
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898?	27,447 26
5. Average rate of interest per annum paid by the Corporation during 1897. On deposits, 3.942 %; on debentures, 4.866%.	
6. Average rate of interest per annum received by the Corporation during 1897. On Mortgages of Realty about 4.75%; on other securities, 5.43 %.	
7. Of the mortgages held by the Corporation $883,887.98 is on realty situate in Ontario, and $3,868.00 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897, including taxes, repairs, insurance, etc., charged to profit and loss	49,221 37
10. Aggregate market value of the land mortgaged to the Corporation, estimated	1,123,008 27
11. How often are the securities held by the Corporation valued? Doubtful loans annually or oftener.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Manager $8,000; cashier, $5,000; collector, $2,000.	
13. When were the accounts of the Corporation last audited? Up to 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898; Robert Sewell, Toronto; Edward B. Freeland, Toronto.	

THE REAL ESTATE LOAN COMPANY OF CANADA, LIMITED.

Head Office, Toronto, Ont.

Constating Instruments.

Incorporated under the Building Societies' Act (Consol. Stat. U.C., c 53) by declaration filed with the Clerk of the Peace for the County of York, 17th September, 1879, with the corporate name of the Real Estate Loan and Debenture Company.—Decl. Book II, s. 57.

Letters Patent of Canada (6th April, 1883) incorporating the Company under the Canada Joint Stock Companies' Act, 1877, with the corporate name of the Real Estate Loan Company of Canada, Limited.—Lib. 85, folio 272, Office of the Registrar-General of Canada. The capital authorized by this instrument was "$2,000 000, being the capital of the said the Real Estate Loan and Debenture Company, with the same powers throughout Canada as are now possessed by the said the Real Estate Loan and Debenture Company, and for the same purposes or objects, subject always to the provisions of the said last mentioned Act [Canada J. S. Co's Act, 1877], and with all such further powers, purposes and objects as are conferred upon loan companies incorporated under the provisions of the said last mentioned Act."

1884, Act of the Dominion of Canada, 47 V. c. 101 (D), respecting sale of assets.

Supplementary Letters Patent of Canada (20th June, 1892) reciting By-law No. 62 of the Company, and (as therein provided) reducing the capital stock from $2,000,000 to $1,600,000.

Annual Statement

Of the condition and affairs of the Real Estate Loan Company of Canada, Limited, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 2 Toronto street in the City of Toronto, in the Province of Ontario.

The Board is constituted of five directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date.
John Smart	President	Port Hope	3rd February, 1897	2nd February, 1898
William Cook	Vice-President	Toronto	"	"
M. H. Aikins, M.D	Director	Burnhamthorpe.	"	"
Hugh Miller	Director	Toronto	"	"
Rev. R. C. Moffatt, D.D.	Director	"	"	"
Benjamin Morton	Manager	"		

A. Permanent capital stock: Total amount authorized, $1,600,000; total amount subscribed, $578,840, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(b).—Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or private Acts.

Last call made: Date, 31st December, 1882; Rate per cent., 10; Gross amount, $25,640; Amount paid thereon, $25,640.

Description.	No. of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		$ c.	$ c.	$ c.	$ c.
1. Fully called	8,061	40 00	322,440 00	322,440 00	
2. 20 per cent. called	6,410	40 00	256,400 00	51,280 00	
Totals	14,471		578,840 00	373,720 00	

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: Total called, $322,440; total paid thereon	322,440 00	
2. (*b*) Ordinary joint stock capital, 20% called: Total called, $51,280; total paid thereon	51,280 00	
		373,720 00
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid.		7,521 76
5. (*e*) Unappropriated profits in respect of (1), (2) or (3)		3,405 30
6. (*f*) Reserve fund in respect of (1), (2) or (3)		50,000 00
7. (*g*) Contingent fund in respect of (1), (2) or (3)		19,000 00
		453,647 06
LIABILITIES TO THE PUBLIC.		
27. Deposits	259 33	
29. Debentures issued in Canada	42,431 50	
30. Interest due and accrued on (29)	347 45	
		43,038 28
Total actual liabilities		496,685 34

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
A.—*Immovable property owned beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :—		
5. (*b*) Freehold land (including buildings) other than foregoing.....	63,019 72	63,019 72
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land.	402,143 63	
10. (*b*) Debts secured by mortgaged land held for sale	19,084 22	421,227 85
C.—*Debts not above enumerated for which the Corporation holds securities as follows :*		
20. (*h*) Debts secured only by Permanent Stock or Shares of the Corporation.....	.....	184 17
E.—*Cash.*		
32. (*b*) In bank	12,153 60	12,153 60
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture...	.....	100 00
Total of assets owned beneficially by Corporation.....	.....	496,685 34

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Total. (Column 4).
		$ c.
	I.—Received by the Corporation for its own use.	
	A.—*Balances from 31st December, 1896.*	
	(*b*) Cash not already shown under (1):—	
2.	(i) On hand	470 89
3.	(ii) In bank	27,689 36
	C.—*Receipts on account of investments, loans or debts.*	
	(*a*) On Mortgages of Realty:—	
10.	(i) Principal	43,585 98
11.	(ii) Interest	21,077 72
	D.—*Receipts from real estate owned beneficially by Corporation.*	
16	(*a*) Sales (not included in any of foregoing items)	1,722 00
17.	(*b*) Rents	3,081 74
	F.—*Borrowed money.*	
25.	(*a*) Bank or other advances, discounts or overdrafts	517 04
26.	(*b*) Borrowed by taking deposits	34 25
27.	(*c*) Borrowed on debentures	7,700 00
	Totals	105,908 98

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Total. (Column 4.)
	I.—Expended on Corporation Account.	$ c.
	A.—*Sums Loaned or Invested on Capital Account.*	
1.	(a) Loaned on Mortgages of Realty (including item 7 (e) if no separate account therefor)	61,044 47
	B.—*Expended on Stock Account.*	
8.	Dividends paid on permanent stock. (*Extend into Column 1*)	15,022 08
	C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*	
20.	(c) Debentures issued in Canada: Principal, $8,500; interest, $1,983.40	10,483 40
	D.—*Management Expenses (other than foregoing).*	
25.	(a) Salaries and fees	4,013 25
26.	(b) Commission or brokerage	119 00
28.	(d) Stationery, postage, printing and advertising	161 97
30.	(f) Fuel, rent, taxes (other than in 32) and rates	300 00
22.	(g) Travelling expenses	50 70
32.	(h) Insurances or taxes advanced on property mortgaged to the Corporation	2,168 08
	E.—*Other Expenditures, viz.:*	
33.	(a) Repairs, bank exchange and other items	81 49
34.	(b) Municipal tax.	255 94
35.	(c) Registration fee	55 00
	F.—*Balance.*	
	(b) Cash in various banks	12,153 60
	Totals	105,908 98

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	15,400 00
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898	
3. Amount of other existing obligations of the Corporation which will mature in 1898? None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	12,082 15
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, None; on debentures, 4.66%.	
6. Average rate of interest per annum received by the Corporation during 1897 on mortgages of realty, 5 23%.	
7. Of the mortgages held by the Corporation $65,362.00 is on realty situate in Ontario, and $356,050 is on realty situate elsewhere.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No., ... ; amount....	
10. Aggregate market value of the land mortgaged to the Corporation. Cannot say.	
11. How often are the securities held by the Corporation valued? Every year.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager, $5,000; Agent at Winnipeg, Man., $5,000.	
13. When were the accounts of the Corporation last audited? 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898? G. B. Sparling, M.A., Toronto; R. D. Moffat, M.D.	

THE ROYAL LOAN AND SAVINGS COMPANY.

Head Office, Brantford, Ont.

Incorporated under the Building Societies' Act (Consol. Stat. U. C., chap. 53) by declaration filed with the Clerk of the Peace for the County of Brant, on 24th March, 1876. (Decl. Book I., 13.)

The lending and the borrowing powers are governed by the Loan Corporations' Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Royal Loan and Savings Company, of Brantford, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 138 Dalhousie Street, in the City of Brantford, in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Wm. Watt, Sr.....	President	Brantford	February, 1897	February, 1898.
J. W. Digby, M.D.... .	Vice-President ..	"	"	"
C. B. Heyd, M.P	Director	"	"	"
John Mann	Director	"	"	"
Henry Cox	Director	Burford	"	"
Geo. H. Wilkes	Director	Brantford	"	"
Judge Jones.....	Director	"	"	"
R. S. Schell	Manager and Sec.	"	.....	....

A. Permanent capital stock: total amount authorized, $500,000; total amount subscribed, $500,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	——		
		$	$ c.	$ c.	$ c.
1. Fully paid	10,000	50	500,000 00	500,000 00	
Totals	10,000		500,000 00	500,000 00	

LIST OF SHAREHOLDERS AS AT 31st DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

——	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—(*Permanent Capital Stock or Shares*).		
1. (*a*) Ordinary joint stock capital fully called: total called, $; total paid thereon	500,000 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	15,000 00	
6. (*f*) Reserve Fund in respect of (1), (2) or (3)	100,000 00	
7. (*g*) Contingent Fund in respect of (1), (2) or (3)	8,163 37	
		623,163 37
LIABILITIES TO THE PUBLIC.		
27. Deposits	318,968 76	
28. Interest on deposits, due, or accrued or capitalized	1,096 42	
29. Debentures issued in Canada	444,686 61	
30. Interest due and accrued on (29)	5,725 91	
		770,477 70
Total actual liabilities		1,393,641 07

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing foreclosed..	55,000 00	55,000 00
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land.	1,075,845 48	
10. (*b*) Debts secured by mortgaged land held for sale	52,373 56	
11. (*c*) Interest due or accrued on item 9 and not included therein.....	24,844 22	
		1,153,063 26
C.—*Debts not above enumerated for which the Corporation holds Securities as follows:*		
14. (*b*) Municipal Bonds or Debentures .. } Owned by Company; face value $93,305.15, cost		
15. (*c*) Public School Debentures ..... }	90,184 34	
20. (*h*) Debts secured only by Permanent Stock or Shares of the Corporation	2,034 10	
		92,218 44
E.—*Cash.*		
(*a*) On hand	1,915 35	
32. (*b*) In banks	91,444 02	
		93,359 37
Total of assets owned beneficially by Corporation.....	.....	1,393,641 07

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Total. (Column 4.)
	I.—Received by the Corporation for its own use.	$ c.
	A.—*Balances from the 31st December, 1896.*	
2.	(i) On hand	2,746 20
3.	(ii) In bank	14,890 21
	(iii) Special deposit	20,000 00
	C.—*Receipts on account of investments, loans or debts.*	
	(*a*) On Mortgages of Realty :—	
10.	(i) Principal	137,873 67
11.	(ii) Interest	64,207 79
	(*b*) On other securities :—	
12.	(i) Principal	6,897 23
13.	(ii) Interest or dividends	5,070 71
	D.—*Receipts from real estate owned beneficially by Corporation.*	
16	(*a*) Sales (not included in any of foregoing items)	1,505 00
17.	(*b*) Rents	3,807 77
	F.—*Borrowed Money.*	
26.	(*b*) Borrowed by taking deposits	515,097 18
27.	(*c*) Borrowed on debentures	173,818 00
	Totals	946,013 76

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Total. (Column 1.)
		$ c.
	I.—Expended on Corporation Account.	
	A.—*Sums Loaned or Invested on Capital Account.*	
1.	(*a*) Loaned on Mortgages of Realty	139,341 92
	(*b*) Loaned or invested in other securities, viz.:	
2.	(i) On Company's stock	2,422 00
6.	(*c*) Real estate transferred to property account	7,003 60
7.	(*d*) Paid for taxes, repairs, etc, on property	1,086 76
	B.—*Expended on Stock Account.*	
8.	Dividends paid on permanent stock. (*Extend into column 1*)	30,000 00
	C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*	
19.	(*b*) Deposits: Principal, $478,853.07; interest, $8,677.00	487,530 07
20.	(*c*) Debentures issued in Canada: Principal, $158,992.63; interest, $18,314.27	177,306 90
	D.—*Management Expenses (other than foregoing).*	
25.	(*a*) Salaries and fees	3,150 00
26.	(*b*) Commission or brokerage	147 50
28.	(*d*) Stationery, postage, printing and advertising	395 26
29.	(*e*) Law costs	342 98
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates	1,026 73
	E.—*Other Expenditures, viz.:*	
33.	(*a*) Registration fee	155 00
34.	(*b*) Repairs, plumbing and telephone	242 41
35.	(*c*) Inspectors costs, $122.12; Guarantee Co., $60.00	182 12
36.	(*d*) Auditors fees, $400.00; directors fees, $983.50	1,383 50
	F.—*Balance.*	
37.	(*a*) Cash on hand $ 1,915 35	
	(*b*) Cash in various banks 91,444 02	
		93,359 37
41.	Written off contingent account during the year for losses on properties sold	937 64
	Totals	946,013 76

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898..	94,985 63
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3 per cent.; on debentures, 4.206 per cent.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5.276 per cent.; on other securities, 5 per cent.	
7. Of the mortgages held by the Corporation $1,100,689.70 is on realty situate in Ontario, and $ is on realty situate elsewhere	
8. Loans written off or transferred to real estate account during 1897.....	7,003 60
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No., 11; amount, $33,630.00.	
10. Aggregate market value of the land mortgaged to the Corporation.....	1,760,000 00
11. How often are the securities held by the Corporation valued? Yearly .	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager, $10,000; accountant, $2,000; teller, $1,000.	
13. When were the accounts of the Corporation last audited? January, 1898; to end of December, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898: Wm. Wilkinson, M.A., Brantford; A. K. Bunnell, Brantford	

THE SECURITY LOAN AND SAVINGS COMPANY.

Head Office, St. Catharines, Ont.

Incorporated under the Building Societies Act (Consol. Stat. U. C. chap. 53), by declaration filed with the Clerk of the Peace for the County of Lincoln, on the 12th March, 1870. The original corporate name was The Security Permanent Building and Savings Society.

That corporate name was changed to The Security Loan and Savings Company in 1876 by 39 V. c. 64 (D); and also by Order in Council of Ontario, dated 18th August, 1876.

The lending and the borrowing powers of the Company are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of The Security Loan and Savings Company of St. Catharines, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 2 St. Paul street, in the City of St. Catharines, in the Province of Ontario,

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Thomas R. Merritt	President	St. Catharines	3rd Feb'y, 1897	2nd Feb'y, 1898
Robert Laurie	Vice-President	"	" 1897	" 1898
John L. Ranney	Director	"	" 1897	" 1898
Edwin Goodman	Director	"	" 1897	" 1898
Judge Senkler	Director		" 1897	" 1898
Henry J. Taylor	Director	"	" 1897	" 1898
Chas. A. F. Ball	Director	Niagara	" 1897	" 1898
E. F. Dwyer	Manager / Sec.-Treas	St. Catharines.		

A. Permanent capital stock: total amount authorized, $300,000: total amount subscribed, $275,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a)—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	——		
		$	$ c.	$ c.	$ c.
1. Fully paid	2,750	100	275,000 00	275,000 00	
Totals	2,750	100	275,000 00	275,000 00	

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

——	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: total called $275,000; total paid thereon	275,000 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	6,875 00	
7. (*g*) Contingent fund in respect of (1), (2) or (3)	3,682 93	
		285,557 93
LIABILITIES TO THE PUBLIC.		
27. Deposits	252,890 51	
28. Interest on deposits, due, or accrued or capitalized	7,466 07	
29. Debentures issued in Canada	70,547 62	
30. Interest due and accrued on (29)	2,295 81	
40. Other liabilities to the public, viz.:		
41. (*a*) Commission account	179 92	
		333,379 93
Total actual liabilities		618,937 86

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing		9,225 51
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land, including accrued interest	509,654 48	
10. (*b*) Debts secured by mortgaged land held for sale, including interest charged	53,038 47	
		562,692 95
C.—*Debts not above enumerated for which the Corporation Holds Securities as follows:*		
14. (*b*) Debts secured by Municipal Bonds or Debentures, including accrued interest		5,352 75
20. (*h*) Debts secured only by Permanent Stock or Shares of the Corporation including accrued interest		4,469 42
E.—*Cash.*		
31. (*a*) On hand		
32. (*b*) In banks		36,156 68
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture		240 55
38. (*b*) Suspense account		800 00
Total of assets owned beneficially by Corporation		618,957 86

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)
		$ c.
	I.—Received by the Corporation for its own use.	
	A.—*Balances from 31st December, 1896.*	
	(*b*) Cash not already shown under (1):	
3.	(ii) In bank	428 05
	B.—*Sums received wholly or partly on Capital Stock.*	
4.	(*a*) Calls on Joint Stock Permanent Capital	100 00
5.	(*b*) Premiums on (4)	20
	C.—*Receipts on account of Investments, Loans or Debts.*	
	(*a*) On Mortgages of Realty:	
10.	(i) Principal	104,907 58
11.	(ii) Interest	32,172 64
	(*b*) On other Securities:—	
12.	(i) Principal	1,322 64
13.	(ii) Interest or Dividends	489 42
	F.—*Borrowed Money.*	
26.	(*b*) Borrowed by taking deposits, including accrued interest	369,557 04
27.	(*c*) Borrowed on debentures	41,709 01
	G.—*Receipts from other sources, viz.* :—	
30.	(*a*) Interest from bank	338 30
	Totals	551,024 88

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)
		$ c.
	I.—Expended on Corporation Account.	
	A.—*Sums Loaned or Invested on Capital Account.*	
1.	(*a*) Loaned on Mortgages of Realty (including accrued interest)	85,068 69
	(*b*) Loaned or invested in other securities, viz. :—	
2.	(i) Loans on shareholders' stock	1,500 00
	B.—*Expended on Stock Account.*	
8.	Dividends paid on permanent stock. (*Extend into column 1*)	13,745 00
	C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.* .	
19.	(*b*) Deposits: Principal, $383,152.15; interest, $7,918.35	391,070 50
20.	(*c*) Debentures issued in Canada: Principal, $16,154.71; interest, $2,359.01	18,513 72
	D.—*Management Expenses (other than foregoing)*:	
25.	(*a*) Salaries and fees	3,170 00
26.	(*b*) Commission or brokerage	202 00
28.	(*d*) Stationery, postage, printing and advertising	175 09
29.	(*e*) Law costs	9 76
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates	744 57
31.	(*g*) Travelling expenses	16 50
32.	(*h*) Insurances or taxes advanced on property mortgaged to the Corporation, included in No. 1.	
	E.—*Other Expenditures, viz.*:	
33.	(*a*) Auditors	200 00
34.	(*b*) Telephone	35 00
35.	(*c*) Sundries	68 25
36.	(*d*) Insurance premiums and expenses	349 12
	F.—*Balance.*	
37.	(*b*) Cash in bank	36,156 68
	Totals	551,024 88

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	27,067 24
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898, none.	
3. Amount of other existing obligations of the Corporation which will mature in 1898, none.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	41,595 45
5. Average rate of interest per annum paid by the Corporation during 1897, on deposits, 3.08%; on debentures, 4.15%; total average, 3.19%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5.94%; on other securities, 5.49%.	
7. Of the mortgages held by the Corporation $576,387.88 is on realty situate in Ontario and none on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	3,063 22
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897—number, 6; amount	24,359 99
11. How often are the securities held by the Corporation valued? Yearly.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager, $10,000; Accountant and Teller, $2,000; Assistant, $2,000.	
13. When were the accounts of the Corporation last audited? In January, 1898, to 31st December, 1897, (monthly audit).	
14 Names and addresses of the auditors respectively for 1897 and 1898 (if appointed), Wm. Thompson and Robert Fowlie, St. Catharines, Ont.	

THE SOUTHERN LOAN AND SAVINGS COMPANY.

Head Office, St. Thomas, Ont.

Incorporated under the Building Societies' Act, R. S. O., 1877, chap. 164, by declaration filed with the Clerk of the Peace for the County of Elgin, on the 24th November, 1870. The original corporate name was "The Southern Counties Permanent Building and Savings Society."

That corporate name was changed to "The Southern Loan and Savings Company" by an Order-in-Council of Ontario, dated 10th April, 1879.

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Southern Loan and Savings Company of St. Thomas, Ont., as at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 250 Talbot street, in the City of St. Thomas, in the Province of Ontario.

The Board is constituted of nine directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Current term of office.	
			Began (date).	Will end (date).
Wm. Mickleborough.....	President	St. Thomas....	13th Feb'y, 1896 ...	3rd Feb'y, 1893.
Thomas Stacey	Vice-President ..	"	"	.....
Shelton Weldon	Director	London.....	4th " 1897 ...	"
W. Armstrong.....	Director	St. Thomas....	"	"
W. E. Leonard.....	Director	"	13th " 1896 ...	"
E. G. Schooley.....	Director	Sparta.....	" .	"
R. Haight..... ...	Director	Union.....	"	"
T. Futcher	Director	St. Thomas....	"	"
D. K. Ferguson.....	Director	"	4th " 1897 ...	"
J. W. Stewart	Manager	"	17th May, 1892 ..	....

A. Permanent capital stock: total amount authorized, $400,000; total amount subscribed, $400,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	—		
		$	$ c.	$ c.	$ c.
1. Fully paid	8,000	50	400,000 00	400,000 00	.....
Totals	8,000	.....	400,000 00	400,000 00	.....

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

Item No.	—	$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	A.—*Permanent Capital Stock or Shares.*		
1.	(a) Ordinary joint stock capital fully called: total called, ... total paid thereon	400,000 00	
6.	(f) Reserve Fund in respect of (1), (2) or (3)	52,000 00	
7.	(g) Contingent Fund in respect of (1), (2) or (3)	5,036 33	457,036 33
	LIABILITIES TO THE PUBLIC.		
27.	Deposits	372,749 04	
29.	Debentures issued in Canada	56,400 00	
30.	Interest due and accrued on (29)	1,155 54	
37.	Owing to Banks (including interest due or accrued)	1,775 70	432,080 28
	Total actual liabilities	.....	889,116 61

Balance Sheet as at 31st December, 1897.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts secured by Mortgages on Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	840,221 38	
10. (*b*) Debts secured by mortgaged land held for sale	41,068 94	
		881,290 32
20. (*h*) Debts secured only by permanent stock or shares of the Corporation		7,565 19
E.—*Cash.*		
32. (*b*) In bank		261 10
Total of assets owned beneficially by Corporation		889,116 61

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Total. (Column 4.)
	I.—Received by the Corporation for its own use.	
	A.—*Balances from 31st December, 1896.*	$ c.
	(*b*) Cash (not already shown under (1)):—	
3.	(ii) In bank	117 53
	C.—*Receipts on Account of Investments, Loans or Debts.*	
	(*a*) On Mortgages of Realty:—	
10.	(i) Principal and interest	130,526 19
	(*b*) On other securities:—	
12.	(i) Principal, loans on stock	332 10
13.	(ii) Interest "	437 11
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*	
16.	(*b*) Sales (not included in any of foregoing items)	6,236 06
17.	(*b*) Rents	
	F.—*Borrowed Money.*	
25.	(*a*) Bank or other advances, discounts or overdrafts	1,775 70
26.	(*b*) Borrowed by taking deposits	362,732 06
27.	(*c*) Borrowed on debentures	49,300 00
	G.—*Receipts from Other Sources, viz.:*	
30.	(*a*) Sundries	142 49
31.	(*b*) Expenses collected from borrowers	125 00
	Totals	551,724 24

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Total. (Column 1.)
	1.—Expended on Corporation Account.	$ c.
	A.—*Sums Loaned or Invested on Capital Account.*	
1.	(*a*) Loaned on Mortgages of Realty, including insurance and taxes	66,075 01
6.	(*c*) Real estate, insurances, taxes, and repairs on property neld for sale	2,942 08
	B.—*Expended on Stock Account.*	
8.	Dividends paid on permanent stock. (*Extend under column 1*)	24,000 00
	C.—*Borrowing Money (other than foregoing) or Interest Thereon Paid, viz.:*	
18.	(*a*) Bank account (principal and interest)	23,291 81
19.	(*b*) Deposits: Principal and interest	423,529 38
20.	(*c*) Debentures issued in Canada: Principal, $3,000; interest, $627.41.	3,627 41
	D.—*Management Expenses (other than foregoing).*	
25.	(*a*) Salaries and fees	2,431 29
26.	(*b*) Commission or brokerage	405 90
28.	(*d*) Stationery, postage, printing and advertising	251 98
29.	(*c*) Law costs	581 26
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates	842 05
31.	(*g*) Travelling expenses and inspector's salary	723 80
32.	(*h*) Sundries, furniture, etc	58 17
	E.—*Other Expenditures, viz.:*	
33.	(*a*) Loss (damages) closing out property	2,500 00
34.	(*b*) Voted by shareholders to president	200 00
35.	(*c*) Sundries	3 00
	F.—*Balance.*	
	(*b*) Cash in bank	261 10
	Totals	551,724 24

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	24,050 00
3. Amount of other existing obligations of the Corporation which will mature in 1898. None except deposits and bank overdrafts.	
5. Average rate of interest per annum paid by the Corporation during 1897, on deposits, 3.76%; on debentures, 4.33%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5.93%; on other securities, about 6%.	
7. Of the mortgages held by the Corporation, $840,221.38 is on realty situate in Ontario, and none on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897.....	16,414 81
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897—number, 14; amount	28,769 44
10. Aggregate market value of the land mortgaged to the Corporation, $1,453,980.00.	
11. How often are the securities held by the Corporation valued? Inspector engaged continuously.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager, $10,000; accountant, $10,000; inspector, $1,000.	
13. When were the accounts of the Corporation last audited? January, 1898, to 31st December, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898: E. J. New, Thamesville; E. McCrone, St. Thomas, to 31st July, 1897, and E. McCrone and E. H. Caughell, St. Thomas, for balance of year; reappointed for 1898.	

THE SOUTHWESTERN FARMERS' AND MECHANICS' SAVINGS AND LOAN SOCIETY.

Head Office, St. Thomas, Ontario.

Incorporated under The Building Societies' Act (Consol. Stat. U. C. chap. 53) by declarations filed with the Clerk of the Peace for the County of Elgin, on the 24th November, 1874.

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Southwestern Farmers' and Mechanics' Savings and Loan Society of St. Thomas, at the 31st December, 1897, and for the year end ng on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 292 Talbot street, in the City of St. Thomas, in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
E. W. Gustin, M.D	President	St. Thomas....	3rd Feb'ry, 1897	February, 1898.
M. A. Gilbert	Vice-President ..	"	5th " 1896	"
Robert Kains, M.D	Director	"	3rd " 1897	"
John Campbell	Director	"	5th " 1896	"
Peter Couse	Director	"	"	"
James Marlatt.....	Director	"	"	"
John Dodd	Director	"	"	"
W. E. Leonard	Manager	"	1st July, 1891....	

A. Permanent capital stock: total amount authorized, no limit fixed; total amount subscribed, $193,800, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a) Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value.	—		
		$	$ c.	$ c.	$ c.
1. Fully paid	3,736	50	186,800 00	186,800 00	
3. Instalment (payable by fixed periodical payments, and still in process of payment)	140	50	7,000 00	4,592 49	2,407 51
Totals.....	3,876	.....	193,800 00	191,392 49	2,407 51

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.
(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

—	—	—
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).	$ c.	$ c.
A.—*Permanent Capital Stock or Shares.*		
Item No.		
1. (a) Ordinary joint stock capital fully called: total called $ total paid thereon	191,392 49	
4. (d) Dividends declared in respect of (1), (2) or (3), but not yet paid	5,603 05	
6. (f) Reserve Fund in respect of (1), (2) or (3)	14,000 00	
7. (g) Contingent Fund in respect of (1), (2) or (3)	2,338 57	
		213,334 11
LIABILITIES TO THE PUBLIC.		
27. Deposits....	214,641 36	
28. Interest on deposits, due, or accrued or capitalized—None.		
29. Debentures issued in Canada	79,400 00	
30. Interest due and accrued on (29)	1,645 46	
		295,686 82
Total actual liabilities.....	.....	509,020 93

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	460,560 33	
10. (*b*) Debts secured by mortgaged land held for sale	17,345 00	477,905 33
C.—*Debts not above enumerated for which the Corporation holds Securities as follows.*		
20. (*h*) Debts secured only by permanent stock or shares of the Corporation.	.....	438 53
E.—*Cash.*		
32. (*b*) In bank, ...	.....	30,677 07
Total of assets owned beneficially by Corporation.....	.....	509,020 93

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Total. (Column 4.)
		$ c.
	I.—Received by the Corporation for its own use.	
	A.—*Balances from 31st December, 1896.*	
3.	(ii) In bank	27,251 49
	B.—*Sums Received Wholly or Partly on Capital Stock.*	
4.	(*a*) Calls on joint stock permanent capital	8,746 89
	C.—*Receipts on Account of Investments, Loans or Debts.*	
	(*a*) On Mortgages of Realty :—	
10.	(i) Principal and Interest	87,308 82
	(*b*) On other securities :—	
12.	(i) Principal (stock loans)	90 00
13.	(ii) Interest or dividends	30 90
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*	
16.	(*a*) Sales and Rent..(not included in any of foregoing items)	1,105 26
	F.—*Borrowed Money.*	
26.	(*b*) Borrowed by taking deposits	274,482 66
27.	(*c*) Borrowed on debentures	47,300 00
	G.—*Receipts from other Sources, viz.*	
30.	(*a*) Bank interest	869 94
	Totals	447,185 96

Cash Account

Expenditure for the year ending 31st December, 1897.

	Total. (Column 4.)
	$ c.
I.—Expended on Corporation Account.	
A.—Sums Loaned or Invested on Capital Account.	
Item No.	
1. (*a*) Loaned on Mortgages of Realty, insurances or taxes advanced on property mortgaged to the Corporation	82,794 06
6. (*c*) Real estate taxes, insurance and repairs	320 94
B.—Expended on Stock Account.	
8. Dividends paid on permanent stock	10,357 31
C.—Borrowed Money (other than foregoing) or Interest thereon paid, viz.:	
19. (*b*) Deposits: Principal, $280,936 70; interest, $246.02	281,182 72
20. (*c*) Debentures issued in Canada: Principal, $36,500.00; interest, $2,863.95	39,163 95
D.—Management Expenses (other than foregoing).	
25. (*a*) Salaries and fees	1,606 60
26. (*b*) Commission or brokerage	414 19
28. (*d*) Stationery, postage, printing and advertising	143 85
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	443 52
31. (*g*) Travelling expenses	57 35
E.—Other Expenditures, viz.:	
33. (*a*) Grant to inspector	25 00
F.—Balance.	
(*b*) Cash in various banks	30,677 07
Totals	447,185 96

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of Debentures issued by the Corporation in Canada which will mature in 1898	31,700 00
3. Amount of other existing obligations of the Corporation which will mature in 1898 ; none except deposits.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, $3.77 % ; on debentures, 4.34 %.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5.784% ; on other securities, 6% ; real estate, 4 to 5%.	
7. Of the mortgages held by the Corporation, $460,560.33 is on realty situate in Ontario, and $ is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	5,558 44
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897 ? No., 7 ; amount, $19,995.00.	
10. Aggregate market value of the land mortgaged to the Corporation, $771,600.00.	
11. How often are the securities held by the Corporation valued ? Annually, in December ; sometimes in June ; properties are reinspected when thought necessary.	
12. (a) What officers of the Corporation are under bond and for what sum respectively ? manager, $10,000 ; clerk, $10,000.	
13. When were the accounts of the Corporation last audited ? Up to 31st December, 1897, in January, 1898.	
14. Names and addresses of the auditors respectively for 1897 and 1898 : Edward McCrone, St. Thomas ; D. K. McKenzie, St. Thomas.	

THE STAR LOAN COMPANY.

Head Office, St. Thomas, Ont.

Incorporated under the Building Societies' Act (R. S. O. 1887, c. 164) by declaration filed with the Clerk of the Peace for the County of Elgin, on the 23rd August, 1881. (Decl. Book I., 3.)

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Star Loan Company of St. Thomas, at the 31st August, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province

The head office of the Corporation is at No. 205 Talbot street, in the City of St. Thomas, in the Province of Ontario.

The Board is constituted of nine directors holding office for two years.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Current term of office.	
			Began (date).	Will end (date).
Hon. D. Mills	President	Ottawa	16th September, 1896	September, 1899
J. P. Finlay	Vice-President.	St. Thomas	18th " 1895	" 1898
C. B. Spohn	Director	"	18th " 1895	"
Edwin Nicholl	Director	"	15th " 1897	" 1899
Donald Turner	Director	West Magdala	15th " 1897	"
R. W. Heburn	Director	Union.	18th " 1895	" 1898
J. A. Bell	Director	St. Thomas	16th " 1896	" 1899
J. P. Marlyn	Director	"	15th " 1897	" 1899
C. Macdougall, Q.C.	Director	"	16th " 1896	" 1899
D. M. Tait	Manager	"		

A. Permanent capital stock: total amount authorized, $270,000; total amount subscribed, $270,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*a*)—*Fixed and permanent capital stock created by the virtue of Building Society Acts.*

Inspection.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	—		
		$ c.	$ c.	$ c.	$ c.
1. Fully paid	2,213	100 00	221,300 00	221,300 00	.....
3. Instalment (payable by fixed periodical payments, and still in process of payment)	487	100 00	48,700 00	20,701 28	27,998 72
Totals	2,700	.....	270,000 00	242,001 28	.....

LIST OF SHAREHOLDERS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST AUGUST, 1897.

Capital and Liabilities.

DR.

—	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: total called $221,300; total paid thereon	221,300 00	
2. (*b*) Ordinary joint stock capital, per cent. called: total called, $48,700; total paid thereon	20,701 28	
		242,001 28
11. (*k*) Reserve Fund	15,000 00	
12. (*l*) Contingent Fund	8,000 00	
		23,000 00
LIABILITIES TO THE PUBLIC.		265,001 28
27. Deposits	196,290 76	
28. Interest on deposits, due, or accrued or capitalized at 31st August, 1897	7,806 82	
40. Other liabilities to the public, viz.:		
41. (a) Sundry solicitors	250 00	
		204,347 58
Total actual liabilities	.....	469,348 86

Balance Sheet as at 31st August, 1897.

Cr.

		$ c.	$ c.
	I.—Assets of which the Corporation is the Beneficial Owner.		
	A.—*Immovable Property Owned Beneficially by Corporation.*		
1.	(*a*) Office premises situate as follows:		
2.	(i) At St. Thomas, held in freehold	2,400 00	2,400 00
	B.—*Debts Secured by Mortgages of Land.*		
9.	(*a*) Debts (other than item 10) secured by mortgages of land	431,068 98	
10.	(*b*) Debts secured by mortgaged land held for sale	6,009 76	437,078 74
	C.—*Debts not above enumerated for which the Corporation holds securities as follows:*		
14.	(*b*) Debts secured by municipal bonds or debentures	402 06	
20.	(*h*) Debts secured only by permanent stock or shares of the Corporation	15,199 32	
26.	(*n*) Interest due and accrued on items 14 to 25 and not included therein	9 77	15,611 15
	D.—*Unsecured Debts.*		
27.	(*a*) Rents		320 48
	E.—*Cash.*		
32.	(*b*) In bank		13,938 49
	Total assets owned beneficially by Corporation		469,348 86

Cash Account.

Receipts for the year ending 31st August, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
	$ c.	$ c.	$ c.
I.—Received by the Corporation for its own use.			
A.—*Balances from 31st August, 1896.*			
Item No. 1. (*a*) Capital account		6,428 44	6,428 44
B. *Sums Received Wholly or Partly on Capital Stock.*			
4. (*a*) Calls on joint stock permanent capital		4,774 41	4,774 41
C.—*Receipts on Account of Investments, Loans or Debts.*			
(*a*) On Mortgages of Realty:			
10. (i) Principal		39,945 70	39,945 70
11. (ii) Interest	23,072 44		23,072 44
(*b*) On other Securities:			
12. (i) Principal		3,774 13	3,774 13
D.—*Receipts from Real Estate Owned Beneficially by Corporation.*			
17. (*b*) Rents	201 86		201 86
F.—*Borrowed Money.*			
26. (*b*) Borrowed by taking deposits		142,490 23	142,490 23
Totals	23,274 30	197,412 91	220,687 21

Cash Account.

Expenditure for the year ending 31st August, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
	I.—Expended on Corporation Account.			
	A.—*Sums Loaned or Invested on Capital Account.*	$ c.	$ c.	$ c.
1.	(*a*) Loaned on Mortgages of Realty		42,771 33	42,771 33
	(*b*) Loaned or invested in other securities, viz.:			
2.	(i) On the Company's stock		5,846 00	5,846 00
7.	(*d*) Loss on real estate sold		1,245 87	1,245 87
	B.—*Expended on Stock Account.*			
8.	Dividends paid on permanent stock. (*Extend into column 1*)	14,338 92		14,338 92
	C.—*Borrowed Money (other than foregoing) or Interest thereon Paid, viz.:*			
19.	(*b*) Deposits: Principal, $132,373.42; interest, $7,865.42	7,865 42	132,373 42	140,238 84
	D.—*Management Expenses (other than foregoing).*			
25.	(*a*) Salaries and fees (manager, auditors and directors)	1,373 50		
26.	(*b*) Commission	104 12		
28.	(*d*) Stationery, postage, printing and advertising	152 40		
30.	(*e*) Law costs	98 40		
31.	(*f*) Fuel, rent, taxes (other than in 32) and rates	306 27		
32.	(*g*) Travelling expenses	28 80		
32.	(*h*) Insurances or taxes advanced on property mortgaged to the Corporation charged to mortgagee. $118.51			2,063 49
	E.—*Other Expenditures, viz.:*			
33.	(*a*) Paid tenant to vacate property sold	50 00		
34.	(*b*) Registration fee, $55; guarantee premium, manager, $45.	100 00		
35.	(*c*) Repairs on buildings	60 00		
36.	(*d*) Water, gas, cleaning, etc.	34 27		244 27
	F.—*Balance.*			
	(*a*) Cash in bank			13,938 49
	Totals	24,512 10	182,236 62	220,687 21

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST AUGUST, 1897.

	$ c.
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	66,363 1
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits? About 4⅛%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6%; on other securities, 6%.	
7. Of the mortgages held by the Corporation, $437,078.74 is on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897	1,245 87
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No. 3; amount	3,870 77
10. Aggregate market value of the land mortgaged to the Corporation, $630,000.	
11. How often are the securities held by the Corporation valued? Yearly or as often as possible.	
12. (*b*) What officers of the Corporation are under bond and for what sum respectively? Manager, $10,000.	
13. When were the accounts of the Corporation last audited? 31st August, 1897, monthly audit.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed), S. H. Palmer, St. Thomas; M. D. Carder, Toronto.	

THE SCOTTISH-AMERICAN INVESTMENT COMPANY (LIMITED).

Head Office, Edinburgh, Scotland.

Chief agency for Ontario, No. 157 Bay street, Toronto.

Chief agent and attorney for Ontario, (Power of Attorney, 2nd September, 1874, also Power of Attorney, 18th February, 1876) :—William Henry Lockhart Gordon, barrister-at-law.

Constating Instruments Filed.

Memorandum of Association and Articles of Association, under (Imp.) *Companies' Act*, 1862 and 1867, both dated 29th March, 1873, and filed in the office of the Registrar of Joint Stock Companies', at Edinburgh, Scotland.

Amendments to Memorandum of Association and Articles of Association, as confirmed on 23rd March, 1875.

Annual Statement.

Note.—The statement made to the Registrar of Loan Corporations is incomplete.

The following is a copy of the financial statement laid before the shareholders at the 25th annual general meeting held at Edinburgh, Scotland, on the 25th February, 1898, the said statement having here added to it a column showing the equivalents in Canadian currency, at $4.87 to the £ sterling :

Balance Sheet as at 31st December, 1897.

Liabilities.

—	£ s. d.	£ s. d.	$ c.	$ c.
To share capital subscribed, 250,000 shares of £10 each, £2 paid	500,000 0 0		2,435,000 00	
To capital paid in advance	16,799 0 0	516,799 0 0	81,811 13	2,516,811 13
To reserve fund		00,000 0 0		1,461,000 00
To insurance fund		10,000 0 0		48,700 00
To debentures		364,441 0 0		1,774,827 67
To debenture stock—				
Bearing 4%	1,078,943 0 0		5,254,455 41	
" 3½%	490,440 0 0	1 569,383 0 0	2,388,442 80	7,642,895 21
To accrued interest on debentures, debenture stock and uncalled capital paid up		9,826 16 11		47,856 74
To sundry liabilities		2,139 16 3		10,420 89
To balance at credit of revenue	56,609 2 0		275,686 32	
Less interim dividend, August, 1897	25,000 0 0	31,609 2 0	121,750 00	153,936 32
		2,804,198 15 2		13,656,447 96

BALANCE SHEET AS AT 31ST DECEMBER, 1897.—*Continued.*

ASSETS.

—	£ s. d.	£ s. d.	$ c.	$ c.
By investments		2,583,585 19 11		12,582,053 79
By investments in this country, viz.:—				
£60,000 Consols	58,400 0 0		284,408 00	
£10,000 Bank of England stock	26,800 0 0		130,516 00	
£7,000 Midland Railway 3% debenture stock	5,574 19 4		27,150 09	
£7,000 London and North-western Railway 3% debenture stock	5,647 9 1		27,503 10	
Office premises at 123 George St.	16,000 0 0		77,920 00	
		112,422 8 5		547,497 19
By interest on investments accrued		22,546 5 0		109,800 24
By cash in hand and at bankers', balance due by agents, bills receivable and sundry assets		62,561 4 5		304,673 15
By coupons purchased		22,782 17 5		110,952 58
By office furniture		300 0 0		1,461 00
		2,804,198 15 2		13,656,447 95

Revenue Account

For the year ending 31st December, 1897.

—	£ s. d.	£ s. d.	$ c.	$
To interest, viz.:—				
On debentures	13,969 6 1		68,030 51	
On debenture stock	59,209 8 2		288,349 82	
On uncalled capital paid up	1,012 9 1		4,930 65	
		74,191 3 4		361,310 98
To expenses, viz.:—				
Directors' and Auditors' fees, Advisory Board salaries and wages.	7,434 19 1		36,208 23	
Stationery, printing and incidental expenses	199 8 9		971 26	
Taxes, insurance, repairs, coal, gas, etc	301 15 5		1,469 62	
Travelling expenses	227 4 11		1,106 69	
Postage and telegrams	210 8 0		1,024 65	
Custody of securities in New York	410 11 5		1,999 48	
		8,784 7 7		42,779 92
To income tax		2,803 6 2		10,145 71
To expenses of debentures, 1897		620 16 6		3,023 41
To balance		56,609 2 0		275,686 32
		142,288 15 7		692,946 35
By balance per Directors' last report		6,000 0 5		29,220 10
By interest on investments		126,963 9 11		618,312 22
By profits on commissions earned		1,377 14 11		6,709 62
By profits on securities sold		7,479 5 10		36,424 15
By rents received		407 17 0		1,986 23
By transfer fees		60 7 6		294 03
		142,288 15 7		692,946 35

THE SIMCOE LOAN AND SAVINGS COMPANY.

Head Office, Barrie, Ontario.

The declaration of incorporation was filed with the Clerk of the Peace for the County of Simcoe on the 18th April, 1896. The incorporation was effected under the Building Societies Act, R. S. O. 1887, c. 169, s. 2, as amended by 56 V. c. 31, s. 1, which added to the said section 2 sub-section 3 as follows:—

"(3). No society constituted or incorporated under this section after the first day of June, 1893, shall have power to loan money or to transact a loaning business or carry on its operations outside the limits of the county in which the society is constituted or incorporated."

By virtue of the above provision, which is continued by the Loan Corporations Act, R. S. O. 1897, c. 205, s. 8 (3, 4) the society is a Local Loan Corporation, limited in its operations to the County of Simcoe.

In other respects also the lending and the borrowing powers are governed by the Loan Corporations Act.

Annual Statement

Of the condition and affairs of the Simcoe Loan and Savings Company of Barrie, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 95 Dunlop street, in the Town of Barrie, in the Province of Ontario.

The Board is constituted of five directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Hon. Charles Drury	President	Oro, Ont.		
C. H. Ross	Vice-President	Barrie, Ont		
E. E. Williams	Director	"		
Geo. Ball	Director	"		
O. H. Lyon	Manag. Director / Secretary	"		

A. Permanent capital stock : total amount authorized, $150,000 ; total amount subscribed, $105,022, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—*Fixed and permanent capital stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st December, 1897.		Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	—		
		$ c.	$ c.	$ c.
1. Fully paid	105,022	105,022 00	100,022 00	5,000 00
Totals	105,022	105,022 00	100,022 00	5,000 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (a) Ordinary Joint Stock Capital fully called : Total called, $105,022 ; Total paid thereon	100,022 00	
C.—*Liabilities to Stockholders or Shareholders other than as already shown under A or B, viz. :*		
24. Profit and loss account	573 16	
		100,595 16
LIABILITIES TO THE PUBLIC.		
27. Deposits	71,401 67	
28. Interest on deposits, accrued	1,063 18	
		72,464 85
Total actual liabilities		173,060 01
Balance of assets over liabilities		3,948 22
		177,008 23

BALANCE SHEET AS AT 31ST DECEMBER, 1897

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*b*) Debts (other than item 10) secured by mortgages of land	129,931 28	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	8,078 93	138,010 21
C.—*Debts not above Enumerated for which the Corporation Holds Securities as Follows:*		
20. (*h*) Debts secured only by permanent stock or shares of the Corporation	32,431 30	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein.	1,256 07	33,687 37
E.—*Cash.*		
31. (*a*) On hand	149 96	
32. (*b*) In bank	5,160 69	5,310 65
Total of assets owned beneficially by Corporation		177,008 23

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. — Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
	$ c.	$ c.	$ c.
I.—Received by the Corporation for its own use.			
A.—*Balances from 31st December, 1896.*			
Item No. 1. (*b*) Cash (not already shown under (1)):			
2. (i) On hand	301 92		
3. (ii) In bank	9,156 25		9,458 17
B.—*Sums Received Wholly or Partly on Capital Stock.*			
4. (*a*) Calls on joint stock permanent capital		5,000 00	5,000 00
C.—*Receipts on Account of Investments, Loans or Debts.*			
(*a*) On Mortgages of Realty :			
10. (i) Principal			3,215 94
11. (ii) Interest	6,275 52		6,275 52
(*b*) On other securities :			
13. (ii) Interest or dividends	606 92		606 92
E.—*Miscellaneous.*			
18. (*a*) Commission, brokerage (or remuneration as corporate agent, trustee, etc.)	72 50		72 50
F.—*Borrowed Money.*			
25. (*a*) Bank or other advances, discounts or overdrafts.	10,196 25		
26. (*b*) Borrowed by taking deposits	97,454 21		107,650 46
Totals			132,279 51

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column
I.—Expended on Corporation Account.		
A.—*Sums Loaned or Invested on Capital Account.*	$ c.	$ c.
Item No. 1. (*a*) Loaned on Mortgages of Realty		24,739 75
(*b*) Loaned or invested in other Securities, viz.:—		
2. (i) On Capital Stock of Company		31,379 85
B.—*Expended on Stock Account.*		
8. Dividends paid on permanent Stock. (*Extend into Column 1*)	4,278 33	4,278 33
C.—*Borrowed Money (other than foregoing) or interest thereon paid, viz:*		
18. (*a*) Bank Account (Principal and Interest)	10,282 13	
19. (*b*) Deposits: Principal, $; Interest, $	54,748 04	65,030 17
D.—*Management Expenses (other than foregoing.)*		
25. (*a*) Salaries and Fees	1,053 96	
26. (*b*) Commission or Brokerage	67 55	
28. (*d*) Stationery, Postage, Printing and Advertising	52 05	
30. (*f*) Fuel, Rent, Taxes (other than in 32), Rates	320 75	
32. (*h*) Insurances or taxes advanced on property mortgaged to the corporation	46 45	1,540 76
F.—*Balance.*		
37. (*a*) Cash on hand	149 96	
(*b*) Cash in bank	5,160 69	5,310 65
Totals		132,279 51

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
1. Amount of Debentures issued by the Corporation in Canada which will mature in 1898 None issued.	
2. Amount of Debentures issued by the Corporation elsewhere which will mature in 1898 None issued.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. Deposits may be called for.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	13,800 00
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4.43%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6%.	
7. Of the mortgages held by the Corporation all are on realty situate in Ontario.	
10. Aggregate market value of the land mortgaged to the Corporation	259,862 00
11. How often are the securities held by the Corporation valued? Yearly.	
12. (a) What officers of the Corporation are under bond and for what sum respectively: None.	
13. When were the accounts of the Corporation last audited? February, 1898.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed) J. L. Barnum, Barrie, Ont.	

THE TRUST AND LOAN COMPANY OF CANADA.

Head Office, London, England.

Chief Agency for Ontario : 25 Toronto street, Toronto.

Chief Agent for Ontario (Power of Attorney, 28th April, 1898) : William Bridgeman Bridgeman-Simpson.

Commissioners and Commissioner for conducting the affairs of the Company in Canada and more particularly for the purposes set out in the Power of Attorney, dated 28th April, 1898 : William Bridgeman Bridgeman-Simpson, Toronto ; Richard Doyne MacDonnell, Winnipeg, and Lourenço Edye, Colonel, Montreal, jointly, and each of them separately, and the survivors and survivor of them.

Constating Instruments.

1843. 7 Vic. c. 63 of the Province of Canada : An Act for Incorporating and Granting Certain Powers to the Upper Canada Trust and Loan Company. (9th Dec., 1843.)

1844. Deed of Settlement. (1st June, 1844).

1845. 9 Vic. chap. 96 (Province of Canada) : An Act to Amend and Extend Certain Provisions of 7 Vic. c. 63. (13th March, 1845.)

1845. 13th November. Royal Charter (England).

1850. 14 Vic. chap. 138 (Province of Canada) : An Act to Alter and Amend 7 Vic c. 63 and 9 Vic. c. 96. (10th August, 1880.)

1858. 22 Vic. c. 132 (Province of Canada) : An Act to Amend and Extend 7 V. c. 63, 9 V. c. 96 and 14 V. c. 138. (16th August, 1858.)

1862. 25 Vic. c. 72 (Province of Canada) : An Act for facilitating the conveyance by the Trust and Loan Company of Upper Canada of lands in the Province of Canada, by and through their Commissioners or Attorneys. (9th June, 1862.)

1868-9. 32 Vic. c. 65 (Province of Ontario) : An Act to amend 25 V. c. 72 (Province of Canada) by declaring the intention of the same, and Confirming Conveyances made by the Trust and Loan Company thereunder. (23rd January, 1869.)

1872. 20th February. Supplementary Royal Charter (England): Changing the corporate name until 25th March, 1872, to "The Trust and Loan Company of Upper Canada, and from and after the 25th March, 1872, to "The Trust and Loan Company of Canada;" also changing the principal place of business in Canada from Kingston to Toronto, etc.

1882. Chap. 111 (Dominion of Canada): An Act for Amending the Acts relating to the Company and for enlarging its powers. (17th May, 1882) This Act extends the powers of the Company to the whole Dominion, and empowers it to issue debenture stock.

1882. 45 Vic. c. 51 (Province of Manitoba).

As to borrowing powers see above instruments, and particularly Arts. 68 and 82 of Royal Charter (13th November, 1845).

Annual Statement

Of the condition and affairs of the Trust and Loan Company of Canada at the 30th September, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 7 Great Winchester street, in the City of London, England.

The chief agency for Ontario is situated at No. 25 Toronto street, in the City of Toronto, in the Province of Ontario.

The chief agent and attorney for Ontario is William Bridgeman Bridgeman-Simpson, and his address is 25 Toronto street, Toronto, in the Province of Ontario.

The Board is constituted of six directors holding office for three years.

The directors and chief executive officers of the Corporation at the 30th September, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Charles Morrison	President	London, Eng	May, 1897	May, 1900
James Dickson	Deputy Chairman	Stoke Poges, Slough, Eng	" 1896	" 1899
The Lord Stratheden and Campbell	Director	London, Eng	" 1895	" 1898
Admiral Field, C.B., M.P	Director	Alverstoke, Eng	" 1896	" 1899
Frederick Henry Scott	Director	Hawkhurst, "	" 1895	" 1898
Russell Stephenson	Director	London, "	" 1897	" 1900
Francis Dixon Brown	Secretary	Great Winchester street, London		

A. Permanent capital stock: total amount authorized, $14,600,000; total amount subscribed, $7,300,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(b).—*Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or Private Acts.*

Description.	No. of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.	Total remaining uncalled.
		$ c.	$ c.	$ c.	$ c.
1. Fully called					
2. 25% called per share of £20	50,000		4,866,666 67	1,216,666 67	3,650,000 00
3. 15% " "	25,000		2,433,333 33	365,000 00	2,068,333 33
4					
Totals	75,000		7,300,000 00	1,581,666 67	5,718,333 33

LIST OF SHAREHOLDERS AS AT 30TH SEPTEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 30TH SEPTEMBER, 1897.

Capital and Liabilities.

DR.

		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No.	A.—*Permanent Capital Stock or Shares.*		
2.	(*b*) Ordinary joint stock capital, 25% called: total held, $4,866,666.67; total paid thereon	1,216,666 67	
3.	(*c*) Ordinary joint stock capital, 15% called: total held, $2,433,333.30; total paid thereon	365,000 00	
5.	(*e*) Unappropriated profits in respect of (1), (2) or (3)	95,001 82	
6.	(*f*) Reserve fund in respect of (1), (2) or (3)	924,138 63	
	C.—*Liabilities to Stockholders or Shareholders other than as already shown under A or B, viz.*		
24.	Suspense account, London, Eng £2,749 19 0		
25.	Exchange " " 1,244 12 1	£5,199 10 1	
26.	Income tax " " 1,204 19 0		
		25,304 25	
			2,626,111 37
	LIABILITIES TO THE PUBLIC.		
31.	Debentures issued elsewhere than in Canada, £866,975 19 11	4,219,283 18	
39.	Due on loans in process of completion or to pay assumed mortgages.	17,300 00	
40.	Other liabilities to the public, viz.: Being sundry creditors in Canada other than 39 and consisting of balances due to appraisers, solicitors and to insurance companies for amounts collected and unpaid £10,343 1 3=$50,336 22		
	Less (39) 17,300 00	33,036 22	
			4,269,619 40
	Total actual liabilities		6,895,730 77

Balance Sheet as at 30th September, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A. *Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :—		
2. (i) At Toronto, Ontario, held in freehold	42,442 00	
3. (ii) At Montreal, Quebec, held in freehold	21,000 00	
4. (iii) At Winnipeg, Manitoba, held in freehold	20,837 22	
5. (*b*) Freehold land (including buildings) other than foregoing	390,355 75	474,634 97
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	4,917,942 58	
10. (*b*) Debts secured by mortgaged land held for sale	136,253 54	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	275,993 89	5,330,190 01
E.—*Cash.*		
31. (*a*) On hand, £14, 18*s*. 7d	72 65	
32. (*b*) In banks	204,890 13	204,962 78
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture	633 38	
38. (*b*) Sundry debtors in London, Eng	1,277 45	
39. (*c*) Dominion Government bonds (owned)	412,620 33	
40. (*d*) Province of Quebec bonds	26,553 75	
41. (*e*) Consols	408,343 75	
42. (*f*) Metropolitan Board of Works bonds	36,514 35	885,943 01
Total of assets owned beneficially by Corporation		6,895,730 77

Cash Account.

Receipts for the year ending 30th September, 1897.

	Amount carried to earnings maintenance or contingent account. (Column 1.)	Amount carried to capital account. Permanent capital including reserve. (Column 3.)	Total. (Column 1.)
I.—Received by the Corporation for its own use			
Item No. A.—*Balances from 30th September, 1896.*	$ c.	$ c.	$ c.
1. (*b*) Capital account		2,495,927 95	
(i) Cash (not already shown under (1)):			
2. (i) On hand			71 31
3. (ii) In bank			298,841 18
C.—*Receipts on account of Investments, Loans or Debts.*			
(*a*) On Mortgages of Realty:			
10. (i) Principal			380,675 00
11. (ii) Interest	339,878 26		353,009 83
(*b*) On other securities:			
12. (i) Principal			6,960 21
13. (ii) Interest or Dividends on Reserve Fund Investments			26,204 10
(*c*) Unsecured debts:			
(i) Principal			565 98
D.—*Receipts from Real Estate Owned Beneficially by Corporation.*			
16. (*b*) Sales (not included in any of foregoing items)			18,264 24
17. (*b*) Rents			15,166 04
F.—*Borrowed Money.*			
27. (*c*) Borrowed on debentures, £83,500			406,366 66
G.—*Receipts from other sources, viz.*:			
30. (*a*) Sundry receipts in Canada, including losses by fire paid by insurance companies, etc., etc			10,880 65
(*b*) Registration fees	61 56		
(*c*) Interest on deposit account	2,196 02		
Totals	342,135 84		

Cash Account.

Expenditure for the year ending 30th September, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
		$ c.	$ c.
	I.—Expended on Corporation Account.		
	A.—*Sums Loaned or Invested on Capital Account.*		
1.	(*a*) Loaned on Mortgages of Realty		259,260 85
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock. (*Extend into column 1*)	94,900 00	
	C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*		
21.	(*d*) Debentures issued elsewhere: Principal, $4,219,283 18; interest, $164,202.26	164,202 26	
	D.—*Management Expenses (other than foregoing).*		
25.	(*a*) Salaries and fees	42,511 50	
26.	(*b*) Commission or brokerage	6,392 04	
28.	(*d*) Stationery, postage, printing and advertising, and petty charges	7,057 91	
29.	(*e*) Law costs	1,685 52	
30.	(*f*) Fuel, rent, taxes (other than in 32) and office furniture	9,723 35	
31.	(*g*) Travelling expenses and inspection	3,106 98	
32.	(*h*) Insurances or taxes advanced on property mortgaged to the Corporation		20,386 43
	E.—*Other Expenditures.*		
33.	(*a*) Permanent improvements, etc., on property owned by Company		50,592 69
34.	(*b*) Interest on amount of reserve fund uninvested	1,648 52	
35.	(*c*) Bond stamps	547 39	
36.	(*d*) Pensions	4,298 88	
	F.—*Balance.*		
37.	(*a*) Cash on hand $ 72 65 (*b*) Cash in various banks 204,890 13		204,962 78
	Carried to reserve and contingent account	6,061 51	
	Totals	342,135 84	

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 30TH SEPTEMBER, 1897

	$ c.
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898.	945,117 90
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898.....	442,247 06
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, ... ; on debentures, 3.70%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6.19% ; on other securities, 2.89%.	
7. Of the mortgages held by the Corporation $1,907,204.67 is on realty situate in Ontario, and $3,146,991.45 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during year ending 30th September, 1897.....	84,860 00
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation during year ending 30th September, 1897—number, 65 ; amount, $113,578.24.	
10. Aggregate market value of the land mortgaged to the Corporation.—Market value fluctuates.	
11. How often are the securities held by the Corporation valued? Book valuations are made twice a year, but Company's officials make frequent inspections.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Toronto: Accountant, $5,000 ; Assistant Accountant, $2,000 ; Registrar, $4,000 ; Inspector, $1,000 ; Clerk, $1,000. Montreal: Accountant, $4,000 ; Registrar, $4,000. Winnipeg: Registrar, $5,000 ; Accountant, $4,000 ; Clerk, $2,000.	
13. When were the accounts of the Corporation last audited? 10th November, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). Augustus Hendricks, 6 Observatory Gardens, Kensington, London, Eng. ; A. Grant Meek, Hillworth House, Devizes.	

THE UNION LOAN AND SAVINGS COMPANY.

Head Office, 28 and 30 Toronto Street, Toronto, Ontario.

Incorporated under the Building Societies Act (Consol. Stat. U. C. chap. 53), by declaration filed with the Clerk of the Peace for the County of York, on the 18th March, 1865. The original corporate name was The Union Permanent Building and Savings Society. That corporate name was, in 1876, changed to "The Union Loan and Savings Company," by Order in Council of Ontario, dated 27th March, 1876; and also by Act of the Dominion of Canada, 39 V. c. 63.

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of The Union Loan and Savings Company of Toronto, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 28 and 30 Toronto street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Walter B. Geikie, M.D ..	President	Toronto.....	February, 1897	February, 1898.
John Stark	Vice-President ..	"	"	"
Wm. N. Eastwood.	Director	"	"	"
H. B. Yates, M.D.....	Director	Montreal	"	"
Wellington Francis.....	Director	Toronto	November, 1897....	"
Thomas Gilmour	Director	"	"	"
Wm. C. McEwen, W.S..	Director	Edinburgh	February, 1897 ...	"
James C. McGee	Manager	Toronto.		

A. Permanent capital stock: total amount authorized, $1,250,000; total amount subscribed, $1,095,400, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*a*).—*Fixed and permanent capital stock created by virtue of Building Society Acts*

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. shares.	Par value.			
		$	$ c.	$ c.	$ c.
1. Fully paid	12,000	50	600,000 00	600,000 00	.....
3. Instalment (payable by fixed periodical payments, and still in process of payment)	9,908	50	495,400 00	99,020 00	396,380 00
Totals	21,908	.....	1,095,400 00	699,020 00	396,380 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. *Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: total called $600,000; total paid thereon	600,000 00	
2. (*b*) Ordinary joint stock capital, — per cent. called: total called $99,080; total paid thereon	99,020 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	20,834 70	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	200,000 00	
7. (*g*) Contingent fund in respect of (1), (2) or (3)	1,316 71	
		921,171 41
LIABILITIES TO THE PUBLIC.		
27. Deposits	197,586 39	
29. Debentures issued in Canada	185,428 73	
30. Interest due and accrued on (29)	3,700 00	
31. Debentures issued elsewhere than in Canada	1,124,127 62	
32. Interest due and accrued on (31)	5,050 00	
37. Owing to banks (including interest due or accrued)	38,273 92	
		1,554,166 66
Total actual liabilities	.....	2,475,338 07

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
A.—*Immovable property owned beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :		
2. (i) At 28 and 30 Toronto street, Toronto, held in freehold ...	66,470 46	
5. (*b*) Freehold land (including buildings) other than foregoing	206,635 00	
6. (*c*) Leasehold land (including buildings) other than foregoing.....	61,119 00	334,224 46
B.—*Debts secured by mortgages of land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land.....	1,656,010 98	
10. (*b*) Debts secured by mortgaged land held for sale	314,136 00	1,970,146 98
C.—*Debts not above enumerated for which the Corporation holds securities as follows :*		
22. (*b*) Debts secured by municipal bonds or debentures (City of Toronto).	77,380 00	
23. (*f*) Debts secured by stock or bonds of any of the Provinces of Canada, Ontario Government	42,115 77	
20. (*h*) Debts secured only on permanent stock or shares of the Corporation.....	19,047 62	138,543 39
E.—*Cash.*		
31. (*a*) On hand	84 14	
32. (*b*) In bank.....	31,054 18	31,138 32
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture and fixtures	....	1,284 92
Total of assets owned beneficially by Corporation... ..	....	2,475,338 07

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	$ c.	$ c.
.—Received by the Corporation for its own use.		
A.—*Balances from 31st December, 1896.*		
Item No. 1. (*b*) Cash (not already shown under (1)):		
2. (i) On hand	3,759 80	3,759 80
3. (ii) In bank		
C.—*Receipts on account of investments, loans or debts.*		
(*a*) On Mortgages of Realty:		
10. (i) Principal	162,639 46	
11. (ii) Interest	139,104 63	301,744 09
D.—*Receipts from real estate owned beneficially by Corporation.*		
17. (*b*) Rents of Company's premises and foreclosed property	7,706 05	7,706 05
F.—*Borrowed money.*		
25. (*a*) Bank or other advances, discounts or overdrafts	38,273 92	
26. (*b*) Borrowed by taking deposits	144,508 12	
27. (*c*) Borrowed on debentures	154,222 89	337,004 93
G.—*Receipts from other sources.*		
30. (*a*) Profit on Exchange		251 83
Totals		650,466 70

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.			Amount carried to earnings, maintenance or contingent account. (Column 1.)
	I.—Expended on Corporation Account.		
	A.—*Sums Loaned or Invested on Capital Account.*		$ c.
1.	(*a*) Loaned on Mortgages of Realty		93,714 26
	(*b*) Loaned or invested in other securities, viz.:—		
2.	(i) On Company's stock		3,950 00
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock. (*Extend into column 1*)		41,669 40
9.	Tax on dividends		712 93
	C.—*Borrowed Money (other than foregoing) or Interest thereon paid, viz.:*		
19.	(*b*) Deposits, including interest		177,445 93
20.	(*c*) Debentures issued in Canada: Principal, $10,700; interest....	$54,749.91	284,352 59
21.	(*d*) Debentures issued elsewhere: Principal, $218,902.68; interest		
	D.—*Management Expenses (other than foregoing).*		
25.	(*a*) Salaries and Fees		11,565 43
26.	(*b*) Commission or Brokerage		3,582 85
28.	(*d*) Stationery, Postage, Printing and Advertising		474 08
29.	(*e*) Law costs		100 00
30.	(*f*) Registration fees		155 00
31.	(*g*) Travelling expenses		35 25
	E.—*Other Expenditures, viz.:*		
33.	(*a*) Interest on bank overdrafts in Great Britain, etc		1,555 16
34.	(*b*) Office furniture		15 50
	F.—*Balance.*		
37.	(*a*) Cash on hand	$ 84 14	
	(*b*) Cash in bank	31,054 18	31,138 32
	Totals		650,466 70

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	14,458 73
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898	184,908 99
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3½%; on debentures, 3⅞%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6%; on other securities, 4%.	
7. Of the mortgages held by the Corporation all are on realty situate in Ontario, and none are on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897, $985 written off ..	30,342 74
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No., 6; amount	26,150 00
11. How often are the securities held by the Corporation valued? In doubtful cases annually or oftener.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? All except one junior clerk at sums from $5,000 down to $500.	
13. When were the accounts of the Corporation last audited? On 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed)? For 1897, Dr. James Carlyle, Toronto; John N. Lake, Hamilton; for 1898, Dr. James Carlyle and Edward B. Freeland, Toronto.	

THE VICTORIA LOAN AND SAVINGS COMPANY.

Head Office, Lindsay, Ontario.

Incorporated under the Building Societies' Act, 1887, c. 169, as amended by 56 V. c. 31 (O) by declarations filed with the Clerk of the Peace for the County of Victoria, on the 4th September, 1895.

The operations of the Company are by law at present restricted to the county of Victoria; see 56 V. c. 31, continued by R. S. O. 1897, c. 205, s. 8 (4).

The lending and the borrowing powers are governed by the Loan Corporations Act, R S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Victoria Loan and Savings Company of Lindsay, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is on Kent street, in the Town of Linsday, in the Province of Ontario.

The Board is constituted of ten directors, holding office for two years.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will en (date).
John Magwood	President	Lindsay, Ont.	December, 1897	February, 1900
W. H. Clark, M.D.	Vice-President	"	"	"
W. H. Stevens	Director	"	"	"
W. M. Flavelle	Director	"	"	"
R. J. McLaughlin	Director	"	"	"
H. Hart, D.D.S	Director	"	"	1899
C. Chittick	Director	"	"	"
S. Armour	Director	"	"	"
Rev. M. Hill	Director	Belleville, Ont.	"	"
H. J. Lytle	Director	Fenlon Falls	"	"
James Low	Secretary ... Manager	Lindsay, Ont.	"	

A. Permanent capital stock: total amount authorized, $300,000; total amount subscribed, $137,000, as more particularly set out in Schedule A hereto.

SCHEDULE A

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st Dec., 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Per value of shares.	—		
		$	$	$ c.	$ c.
1. Fully called	369	100	36,800 00	36,800 00	.....
2. Partly called	.....	.....	.....	.....	.....
3. Instalment still in process of payment*	1,002	100	100,200 00	44,589 79	55,610 21
Totals	1,370	.....	137,000 00	81,389 79	55,610 21

*No. 3. Is being paid as convenient to shareholders, but is payable on demand if required.

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

Dr.

Item No.		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	A—*Permanent Capital Stock or Shares.*		
1.	(*a*) Ordinary joint stock capital fully called; total called, $37,000; total paid thereon	37,000 00	
2.	(*b*) Ordinary joint stock capital per cent. called: total called $: total paid thereon	44,389 79	
5.	(*c*) Unappropriated profits in respect of (1), (2) or (3)	1,394 49	
			82,784 28
	LIABILITIES TO THE PUBLIC.		
27.	Deposits	27,307 19	
28.	Interest on deposits, due, or accrued or capitalized	231 70	
			27,538 89
	Total actual liabilities	.....	110,323 17

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	100,747 88	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	3,549 69	104,297 57
C.—*Debts not above enumerated for which the Corporation holds securities as follows:*		
20. (*h*) Debts secured only by Permanent Stock or Shares of the Corporation	1,350 00	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	9 68	1,359 68
E.—*Cash.*		
31. (*a*) On hand	873 58	
32. (*b*) In banks	3,130 16	4,003 74
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture		662 18
Total of assets owned beneficially by Corporation		110,323 17

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.
A.—*Balances from 31st December, 1896.*			
Item No. (*b*) Cash (not already shown under (1)):—			
2. (i) On hand	1,183 00		
3. (ii) In bank	2,652 68		3,835 68
B.—*Sums received wholly or partly on Capital Stock.*			
4. (*a*) Calls on Joint Stock Permanent Capital		40,283 14	40,283 14
C.—*Receipts on Account of Investments, Loans or Debts*			
(*a*) On Mortgages of Realty :—			
10. (i) Principal	12,853 02		
11. (ii) Interest	3,873 83		16,726 85
E.—*Miscellaneous.*			
18. (*a*) Commission, Brokerage (or Remuneration as Corporate Agent, Trustee, etc)	26 00		
19. (*b*) Premium or Bonus on Loans	28 15		
20. (*c*) Membership or Entry Fees (being income of Corporation)	188 95		243 10
F.—*Borrowed Money.*			
26. (*b*) Borrowed by taking deposits	47,958 42		47,958 42
Totals	68,764 05	40,283 14	109,047 19

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
I.—Expended on Corporation Account.			
A.—*Sums Loaned or Invested on Capital Account.*	$ c.	$ c.	$ c.
Item No.			
1. (*a*) Loaned on Mortgages of Realty	67,776 08		67,776 08
(*b*) Loaned or invested in other securities, viz. :			
2. (i) Permanent stock		1,350 00	1,350 00
B.—*Expended on Stock Account.*			
8. Dividends paid on permanent stock. (*Extend into Column 1*)	4,227 95		4,227 95
C.—*Borrowed Money (other than foregoing) or Interest thereon paid, viz.:*			
18. (*a*) Bank account (Principal and interest)	32 00		
19. (*b*) Deposits : Principal, $... .. ; interest	30,557 21		30,589
D.—*Management Expenses other than foregoing.*			
25. (*a*) Salaries and fees	445 85		
28. (*d*) Stationery, postage, printing and advertising.	115 40		
29. (*e*) Law costs, registration fees	32 00		
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	90 24		
31. (*g*) Travelling expenses	15 74		699 23
E.—*Other Expenditures, viz.:*			
33. (*a*) Office furniture	100 98		400 98
F.—*Balance.*			
37. (*a*) Cash on hand	873 58		
(*b*) Cash in banks	3,130 16		4,003 74
Totals	107,697 19	1,350 00	109,147 19

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

——	$ c.
1. Amount of Debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of Debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. None.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4.25 %.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty? 6.25 %.	
8. Loans written off or transferred to real estate account during 1897? None.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No. ....Amount. None.	
10. Aggregate market value of the land mortgaged to the Corporation, $200,100.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager $10,000.	
13. When were the accounts of the Corporation last audited? 31st December 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 J. R. McNeillie, Lind-ay; R. McCauley, Lindsay.	

THE WESTERN CANADA LOAN AND SAVINGS COMPANY.

Head Office, Toronto, Ontario

Constating Instruments.

1863.—Declaration of incorporation under Consol. Stat of U. C. chap. 53, filed with the Clerk of the Peace for the County of York on the 13th January, 1863. (Decl. Book II., 41.) The original corporate name was The Western Canada Permanent Building and Saving Society.

1874.—Act of the Dominion of Canada, 37 V. c. 101, changing the corporate name to The Western Canada Loan and Savings Company; defining powers, etc.

1876.—Act of the Province of Ontario, 39 V. c. 96, confirming change of name.

1886.—Act of the Dominion of Canada, 49 V. c. 105, regulating the borrowing powers, the issue of debentures and debenture stock, etc.

1887.—Act of the Dominion of Canada, 50-51 V. c. 109, extending the operations of the Company to the whole Dominion, subject to the laws of the several Provinces. (Secs. 1 and 2.)

Annual Statement

Of the condition and affairs of the Western Canada Loan and Savings Company of Toronto, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario pursuant to the laws of the said Province.

The head office of the Corporation is at No. 76 Church Street in the City of Toronto, in the Province of Ontario.

The Board is constituted of seven directors holding office for two years.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Hon. J. W. Allan	President	Toronto, Ont	17 Feb., 1896	Feb., 1898.
George Gooderham	Vice-President	" "	15 " 1897	" 1899
Thomas H. Lee	Director	" "	17 " 1896	" 1898
George W. Lewis	Director	" "	15 " 1897	" 1899
Alfred Gooderham	Director	" "	" "	" "
Geo. F. Galt	Director	Winnipeg "	11 Jan., "	" "
Walter S. Lee	Managing Director	Toronto "	15 Feb., "	" "

A.—Permanent capital stock: Total amount authorized, $3,000,000; total amount subscribed, $1,500,000, as more particularly set out in schedule A.

SCHEDULE A.

(b.) Fixed and permanent capital stock created by virtue of Joint Stock Company's Acts or Private Acts.

Description.	No. of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid.
		$	$ c.	$ c.	$ c.
1. Fully called.....	20,000	50	1,000,000 00	1,000,000 00	none.
2. 25 per cent. called	40,000	50	2,000,000 00	500,000 00	1,500,000 00
Totals.....	60,000		3,000,000 00	1,500,000 00	1,500,000 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

Item No.		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS.)		
	A.—*Permanent Capital Stock or Shares.*		
1.	(*a*) Ordinary joint stock capital fully called: Total called $1,000,000, total paid thereon.....	1,000,000 00	
2.	(*b*) Ordinary joint stock capital 25 per cent. called; Total called $500,000, total paid thereon.....	500,000 00	
4.	(*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid.	45,000 00	
6.	(*f*) Reserve Fund in respect of (1), (2) or (3)	770,000 00	
7.	(*g*) Contingent fund in respect of (1), (2) or (3)..	17,625 10	2,332,625 10
	LIABILITIES TO THE PUBLIC.		
27.	Deposits.....	769,837 73	
28.	Interest on deposits, due or accrued or capitalized.....	12,659 90	
29.	Debentures issued in Canada	693,985 69	
30.	Interest due and accrued on (29).....	11,751 55	
31.	Debentures issued in Canada and payable elsewhere.....	2,921,127 46	
32.	Interest due and accrued on (31).....	24,566 20	
40.	Other liabilities to the public, viz.:		
41.	(*b*) Sundry accounts including coupons outstanding	692 74	4,434,621 27
	Total actual liabilities.....	.....	6,767,246 37

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows:		
2. (i) At Toronto, held in freehold	15,659 77	
3. (ii) At Winnipeg, Man., held in freehold	114,187 76	
5. (*b*) Freehold land (including buildings) other than foregoing	180,266 85	
(*c*) Leasehold land (including buildings) other than foregoing	70,000 00	380,114 38
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	5,232,965 15	
10. (*b*) Debts secured by mortgaged land held for sale	812,443 88	6,045,409 03
C.—*Debts not above enumerated for which the Corporation holds securities as follows:*		
20. (*h*) Debts secured only by Permanent Stock or shares of the Corporation	44,352 44	
22. (*j*) Debts secured by Board of Trade and other Debentures	3,310 00	47,662 44
E.—*Cash.*		
31. (*a*) On hand	1,122 11	
32. (*b*) In banks	292,938 41	294,060 52
Total of assets owned beneficially by Corporation		6,767,246 37

Cash Account

Receipts for the year ending 31st December, 1897

Item No.		Total. (Column 4).
		$ c.
	I.—Received by the Corporation for its own use.	
	A.—*Balance from 31st December, 1896.*	
	(*b*) Cash (not already shown under 1):	
2.	(i) On hand	4,005 41
3.	(ii) In bank	167,655 43
	C.—*Receipts on account of investments, loans or debts.*	
	(*a*) On Mortgages of Realty:—	
10.	(i) Principal	441,141 24
11.	(ii) Interest	455,297 18
	(*b*) On other securities:—	
12.	(i) Principal, stock loans	7,753 87
13.	(ii) Interest or dividends	2,200 93
14.	(i) Principal } Loans renewed	482,843 00
15.	(ii) Interest }	
	D.—*Receipts from Real Estate owned beneficially by Corporation.*	
17.	(*b*) Rents	17,702 89
	E.—*Miscellaneous.*	
19.	(*b*) Premium or bonus on loans	350 00
	F.—*Borrowed Money.*	
26.	(*b*) Borrowed by taking deposits	259,230 37
27.	(*c*) Borrowed on debentures	446,069 35
	Totals	2,284,249 67

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c.
Item No. A.—*Sums Loaned or Invested on Capital Account.*		
1. (*a*) Loaned on Mortgages of Realty		473,883 95
(*b*) Loaned or invested in other securities, viz. :		
2. (i) Loans renewed		482,843 00
3. (ii) Stock loans		35,785 47
B.—*Expended on Stock Account.*		
8. Dividends paid on permanent stock, including tax		92,281 62
C.—*Borrowed Money (other than foregoing) or Interest thereon Paid, viz.* :		
19. (*b*) Deposits : Principal and interest		356,987 99
20 (*c*) Debentures issued in Canada : Principal, $109,175.81 ; interest, $25,653.03		134,828 84
21. (*d*) Debentures issued elsewhere : Principal, $248,759.66 ; interest, $114,662.92		363,422 58
D.—*Management Expenses (other than foregoing).*		
25. (*a*) Salaries and fees		
26. (*b*) Commission or brokerage		
27. (*c*) Advances to agents		
28. (*d*) Stationery, postage, printing and advertising		46,001 57
29. (*e*) Law costs		
30. (*f*) Fuel, rent, taxes (other than in 32) and rates		
31. (*g*) Travelling expenses		
E.—*Other Expenditures, viz.* :		
33. (*a*) Directors' compensation		3,720 00
34. (*b*) Office premises		434 13
F.—*Balance.*		
37. (*a*) Cash on hand	1,122 11	
(*b*) Cash in various banks	292,938 41	
		294,060 52
Totals		2,284,249 67

Miscellaneous Statement for the Year Ending 31st December, 1897

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	78,718 00
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898	700,006 71
3. Amount of other existing obligations to the Corporation which will mature in 1898, none.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	642,846 17
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3.15%; on debentures, 3.88%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6.95%; on other securities, 5%.	
7. Of the mortgages held by the Corporation $3,626,658.21 is on realty situate in Ontario, and $2,669.017.67 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	56,175 20
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No., 41; amount	79 566 71
10. Aggregate market value of the land mortgaged to the Corporation	14,000,000 00
11. How often are the securities held by the Corporation valued. Yearly.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? All officers in important positions are under bond for $2,000 to $10,000.	
13. When were the accounts of the Corporation last audited? Up to 31st December, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). W. R. Harris, Toronto; A. E. Osler, Toronto.	

THE WESTERN LOAN AND TRUST COMPANY, LIMITED.

Head Office, Montreal, Province of Quebec.

W. Barclay Stephens, Manager. Chief Agent for Ontario, George Frederick Birely, Hamilton. (Power of Attorney, 29th September, 1897.)

The Company was originally incorporated on 21st January, 1892, as a Building Society, under Revised Statutes of Manitoba, 1891, chap. 14, secs. 3-7, continuing division 9 of chapter 9 of the Consolidated Statutes of Manitoba. Declaration of Incorporation executed as of the 15th January, 1892. The original corporate name was "The Manitoba Loan and Trust Company."

By Order-in-Council of Manitoba the corporate name was changed from "The Manitoba Loan and Trust Company," to "The Western Loan and Trust Company, Limited." Manitoba Gazette, 22nd April, 1893.

In 1895 the Company was incorporated as a joint stock company by special Act of the Province of Manitoba, 58 V. c. 53; of which Act:—

For the lending powers, see secs. 8 and 16.

For the borrowing powers, see secs. 10, 11, 14, 15.

For powers as executor, administrator, trustee, etc., see sec. 9.

For powers as agent or guarantor, see sec. 9.

The Company was granted registry under the Loan Corporations Act of Ontario to do business therein only as a loan company.

The Company has notified the Registrar of Loan Corporations of its intention to discontinue business in Ontario.

Annual Statement.

None received.

II. LOAN COMPANIES.

B. COMPANIES HAVING TERMINATING AS WELL AS PERMANENT STOCK, OR HAVING TERMINATING STOCK ONLY.

DETAILED REPORTS OF THE SEVERAL COMPANIES.

THE AID SAVINGS AND LOAN COMPANY.

Head Office, Toronto, Ontario.

Incorporated under the Building Societies Act, R. S. O. 1887, c. 169, by declaration filed with the Clerk of the Peace for the County of York, on the 3rd March, 1893.

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Aid Savings and Loan Company at 28th February, 1898, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 60½ Adelaide street east, in the City of Toronto, in the Province of Ontario.

The Board is constituted of nine directors holding office for one year.

The directors and chief executive officers of the Corporation at the 28th February, 1898, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
R. S. Williams	President	Toronto	3rd February, 1893	March, 1898.
H. T. Machell, M.D.	Vice-President.	"	"	"
R. H. Greene	2nd Vice-President.	"	"	"
R. Harmer	Director	"	"	
J. B. Reid	Director	"	"	"
W. J. Hare	Director	Oshawa, Ont	"	
E. J. Pearson	Director	Toronto	March, 1897	"
John Watson	Director.	"	"	"
A. E. Hill	Managing Director.	60½ Adelaide street east	3rd February, 1893	"
Benjamin Lloyd	Secretary	" "	"	"

B. Terminating or withdrawable stock: Total amount subscribed, $301,000, made up as follows:

..... shares fully paid stock, nil; ..... shares "prepaid" stock (other than above), nil; 3,096½ shares instalment stock (payable by fixed periodical payments of 50c. and 75c. per share) of $100 per share par value, on which there has been paid in $49,159.86; total number of shares, 3,096½, subscribed by 386 shareholders, who have paid thereon the total of $49,159.86.

SCHEDULE B.

Shares of terminating or withdrawable stock.	Instalment. No.	Instalment. Amount.	Total.
		$ c.	$ c.
Number and amount in force at 28th February, 1897		39,425 87	
" issued during 1897		17,418 95	
Gross total in force at any time in 1897			56,844 82
Deduct as follows:	No. of shares.	Amount.	
		$	
Withdrawn and paid off during 1897		7,684 96	
Total deduction		7,684 96	7,684 96
Net total remaining in force 28th February, 1898	3,096½		49,159 86
Total amount distributed or credited in 1897:			
(2) As dividends out of profits			2,716 52
Rate or rates per cent. of such dividends			

BALANCE SHEET AS AT 28TH FEBRUARY, 1898.

Capital and Liabilities.

DR.

	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).	
B.—*Terminating Capital Stock or Shares.*	
Item No. 20. (*g*) Instalment stock: Total issue now in force, 3,096½ shares at $100 per share $ on which has been paid	49,159 86
21. (*h*) Profits or accrued interest on (20) credited or appropriated but not paid out	2,716 52
22. (*i*) Profits or accrued interest on (20) not credited or appropriated	4 48
23. (*j*) Instalments or premiums paid on (20) in advance	10 25
C.—*Liabilities to Stockholders or Shareholders other than as already shown under A or B, viz.*	
24. Contingent or reserve fund	420 00
Total actual liabilities	52,311 11

LIABILITIES TO THE PUBLIC.—None.

Balance Sheet as at 28th February, 1898.

Cr.

	$ c.	$ c.
I. Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts Secured by Mortgages of Land*		
9. (*a*) Debts (other than item 10) secured by mortgages of land.	40,828 63	
10. (*b*) Debts secured by mortgaged land held for sale	2,468 09	43,296 72
C.—*Debts not above enumerated for which the Corporation holds Securities as follows:*		
21. (*i*) Debts secured only by terminating stock or shares of the Corporation	6,505 00	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	977 13	7,482 13
E.—*Cash.*		
31. (*a*) On hand	44 76	
32. (*b*) In bank	1,487 50	1,532 26
Total of assets owned beneficially by Corporation	.....	52,311 11

Cash Account.

Receipts for the year ending 28th February, 1898.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)
I.—Received by the Corporation for its own use.	$ c
A.—*Balances from 28th February, 1897.*	
Item No. 2. (*b*) Cash on hand	8 97
B.—*Sums Received Wholly or Partly on Capital Stock.*	
8. (*e*) Dues on Instalment Building Society stock	2,372 18
Totals.....	2,381 15

Cash Account.

Expenditure for the year ending 28th February, 1898.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)
I.—Expended on Corporation Account.	$ c.
D.—*Management Expenses (other than foregoing).*	
Item No.	
25. (*a*) Salaries and fees	1,340 00
26. (*b*) Commission or brokerage	408 22
27. (*c*) Advances to agents	131 66
28. (*d*) Stationery, postage, printing and advertising	162 74
29. (*e*) Law costs	78 31
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	120 00
31. (*g*) Travelling expenses	116 80
F.—*Balance.*	
37. (*a*) Cash on hand	23 42
Totals	2,381 15

Miscellaneous Statement for the Year Ending 28th February, 1898.

	$ c.
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6½%; on other securities, 9%.	
7. Of the mortgages held by the Corporation $40,828.63 is on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897	1,268 09
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897—number, 1; amount	1,000 00
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Secretary, $2,000; Manager, $1,000.	
13. When were the accounts of the Corporation last audited? 28th February, 1898.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). W. C. Eddes, F.C.A.; W. B. Tindall, F.C.A.	

THE BIRKBECK INVESTMENT, SECURITY AND SAVINGS COMPANY OF TORONTO.

Head Office, Toronto, Ontario.

Incorporated under the Building Societies' Act (R. S. O. 1887, c. 169), by declaration filed with the Clerk of the Peace for the County of York, on the 10th May, 1893. (Decl. Book II, 92.)

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Birkbeck Investment, Security and Savings Company of Toronto, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 21 Melinda street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of five directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
H. P. Dwight	President	Toronto	1st July, 1897	1st July, 1898
Thomas Long	Vice-President	"	"	"
S. H. Ewing	Director	Montreal	"	"
Stapleton Caldecott	Director	Toronto	"	"
F. J. Stewart	Director	"	"	"
F. W. G. Fitzgerald	Manager and Secretary	"		

A. Permanent capital stock : total amount authorized, $5,000,000 ; total amount subscribed $527,100, as more particularly set out in Schedule A hereto.

Schedule A.

(*a*).—*Fixed and permanent capital stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares	—		
		$	$ c.	$ c.	$ c.
1. Fully paid	913	100	91,300 00	91,300 00	
2. Prepaid ($50 shares)	4,358	100	435,800 00	217,896 00	
Totals	5,271		527,100 00	309.196 00	

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.
(Not printed.)

583 shares "prepaid" stock (other than above) at $40 per share $23,320, on which there has been paid in $23,320; 12,024 shares instalment stock (payable by fixed periodical payments) at $100 per share, $1,202,400, on which there has been paid in $103,355 04 Total number of shares , subscribed by shareholders, who have paid thereon the total of $126,675 04

SCHEDULE B

—	Prepaid. No.	Prepaid. Amount.	Instalment No.	Instalment Amount.	Total.
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$		$	
Number and amount in force 31st December, 1896....	397	39,700	10,869	1,086,960	1,126,600
" issued during 1897....	239	23,900	3,130	313,000	336,900
Gross total in force at any time in 1897	636	63,600	13,999	1,399,900	1,436,500
	No. of shares	Amount			
Deduct as follows;		$			
Withdrawn and paid off during 1897	1,950	193,000			
Converted into permanent stock during 1897	45	4,500			
Total deduction	....	.....	53	5,300	1,975	197,500	202,800
Net total remaining in force at 31st December, 1897..			583	58,300	12,024	1,202,400	1,260,700
Total amount distributed or credited in 1897:—							
(1) As interest			.....	1,581 14	.....	8,451 59	

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

DR. *Capital and Liabilities*

No. Item.	—	$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	B.—*Permanent Capital Stock or Shares.*		
14.	(*a*) Fully paid stock: total in force, 913 shares at $100 per share ..	91,300 00	
17.	(*d*) Prepaid stock: total in force, 4,358 shares at $50 per share of $100, on which has been paid	217,896 00	
18.	(*e*) Profits or accrued interest on (17) credited or appropriated but not yet paid	11,249 49	
	Terminating:—		
20.	(*g*) Instalment stock: Total issue now in force, 12,024 shares at $ per share of $100, on which has been paid....	103,355 04	
21.	(*h*) Profits or accrued interest on (20) credited or appropriated but not paid out....	16,225 91	
23.	(*a*) Prepaid stock: total in force, 583 shares at $40 per share of $100, on which has been paid....	18,759 86	
23.	(*e*) Profits or accrued interest on (23*a*) credited or appropriated but not yet paid	3,278 27	
24.	Reserve Fund	3,518 27	
25.	Profits on (17), (20) and (23) not credited or appropriated....	8,219 84	
			473,802 68
	LIABILITIES TO THE PUBLIC.		
39.	Due on loans in process of completion or to pay assumed mortgages.	20,350 00	
40.	Other liabilities to the public, viz.:—		
41.	(*a*) Contingent account....	1,385 07	
			21,735 07
	Total actual liabilities		[illegible]

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	443,300 08	
10. (*b*) Debts secured by mortgaged land held for sale	2,472 15	445,772 23
C.—*Debts not above Enumerated for which the Corporation Holds Securities as follows.*		
20. (*h*) Debts secured only by permanent stock or shares of the Corporation	505 00	
21. (*i*) Debts secured only by terminating stock or shares of the Corporation	2,809 50	
22. (*j*) Insurance premiums advanced for borrowers	161 93	
23. (*k*) Taxes advanced for borrowers	830 12	4,306 55
E.—*Cash.*		
32. (*b*) In bank		43,082 67
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture	1,017 78	
38. (*b*) Licenses	380 00	
39. (*c*) Agents' balances	978 52	2,376 30
Total of assets owned beneficially by Corporation		495,537 75

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account.	Amount carried to capital account.		Total.
		Terminating capital.	Permanent capital, including reserve.	
	(Column 1.)	(Column 2.)	(Column 3.)	(Column 4.)
	c.	$ c.	$ c.	$ c.
I.—Received by the Corporation for its own use.				
Item No. A.—*Balances from 31st December, 1896.*				
1. (a) Capital account	27,169 54			27,169 54
B.—*Sums received wholly or partly on Capital Stock.*				
6. (c) Sales of fully paid building society stock			54,200 00	54,200 00
7. (d) Sales of prepaid building society stock		6,720 00	54,666 00	61,386 00
8. (e) Dues on instalment building society stock		62,562 37		62,562 37
9. (f) Premiums on (6), (7) and (8)	5,161 75			5,161 75
C.—*Receipts on Account of Investments, Loans or Debts.*				
(a) On Mortgages of Realty :—				
10. (i) Principal			32,283 86	32,283 86
11. (ii) Interest	31,639 71			31,639 71
(b) On other Securities :—				
12. (i) Principal			1,876 07	1,876 07
13. (ii) Interest or Dividends	93 70			93 70
D.—*Receipts from Real Estate Owned Beneficially by Corporation.*				
17. (b) Rents	206 60			206 60
E.—*Miscellaneous.*				
18. (a) Commission, brokerage (or remuneration as corporate agent trustee, etc.)	1,014 08			1,014 08
20. (c) Membership or entry fee (being income of Corporation)	2,482 30			2,482 30
21. (d) Fines	363 27			363 27
24. (g) Conversions of terminating stock into permanent stock. (*Extend into column 3*)			607 73	607 73
G.—*Receipts from other sources, viz.* :				
30. (a) Transfer fees	14 00			14 00
(b) Agent's accounts	1,398 92			1,398 92
(c) Insurance premiums	36 50			36 50
(d) Legal expenses	10 00			10 00
(e) Taxes returned	66 50			66 50
Totals	69,656 87	69,282 37	143,633 66	282,572 90

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1).	Amount carried to capital account.		Total. (Column 4).
		Terminating capital. (Column 2.)	Permanent capital, including reserve. (Column 3.)	
I.—Expended on Corporation Account.	$ c.	$ c.	$ c.	$ c.
A.—*Sums Loaned or Invested on Capital Account.*				
Item No.				
1. (*a*) Loaned on Mortgages of Realty			184,331 31	184,331 31
(*b*) Loaned or invested in other securities			2,496 50	2,496 50
B.—*Expended on Stock Account.*				
8. Dividends paid on permanent stock (*Extend into Column 1*)	13,247 53			13,247 53
11. Paid for Terminating Stock withdrawn. (*Extend into Column 1 or 2; or divide between 1 and 2, as the case may be*)	1,175 93	18,885 91		20,061 84
16. Terminating stock converted into permanent. (*Extend into Column 2*)		607 73		607 73
D.—*Management Expenses (other than foregoing).*				
25. (*a*) Salaries and Fees	7,164 00			
26. (*b*) Commission or Brokerage	1,353 52			
27. (*c*) Advances to Agents	2,517 50			
28. (*d*) Stationery, Postage, Printing and Advertising	1,208 54			
29. (*e*) Law costs	141 86			
30. (*f*) Fuel, Rent, Taxes (other than in 32) and rates	1,215 47			
31. (*g*) Travelling Expenses	871 79			
32. (*h*) Insurances or taxes advanced on property mortgaged to the corporation	1,160 06			15,632 74
E.—*Other Expenditures, viz.:*				
33. (*a*) Office furniture, signs	481 78			
34. (*b*) Discount on advance payments	48 50			
35. (*c*) Membership fees	2,482 30			
36. (*d*) License account	100 00			3,112 58
F.—*Balance.*				
37. (*a*) Cash on hand				
(*b*) Cash in various banks	43,082 67			43,082 67
Totals	76,251 45	19,493 64	186,827 81	282,572 90

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. None .	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898. None.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, no deposits; on debentures, no debentures; on debenture stock, no debenture stock.	
7. Of the mortgages held by the Corporation, $94,735 is on realty situate in Ontario, and $348,565.08 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	2,800 00
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No. 7; amount	5,150 00
10. Aggregate market value of the land mortgaged to the Corporation, about	742,954 00
11. How often are the securities held by the Corporation valued? Valued in all doubtful cases.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Accountant, $1,000; inspector, $1,000; western manager, $2,000; manager, $3,000; all agents, local treasurers having collection and custody of Company's money are also bonded, in sums varying from $200 to $1,000, according to the needs of the particular case.	
13. When were the accounts of the Corporation last audited? 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897-1898, (if appointed): George D. Perry, A. C. McConnell, Toronto.	

THE BIRKBECK LOAN COMPANY.

Head Office, London, Ont.

Incorporated under the Building Societies Act, (R.S.O. 1887, c. 169) by declaration filed with the Clerk of the Peace for the County of Middlesex, on the 11th February, 1893. (Decl. Book I., 75.)

The borrowing and the lending powers are governed by the Loan Corporations Act, R.S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Birkbeck Loan Company of London, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 169 Dundas Street, in the City of London, in the Province of Ontario.

The Board is constituted of four directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
R. J. C. Dawson	President	London	29th January, 1897.	28th January, 1898.
J. B. Campbell	Vice-President	"	"	"
W. S. B. Barkwell	Treasurer	"	"	"
W. H. Hortman	Director	"	"	"
T. H. Luscombe	Secretary	"	2nd " 1896.	31st Dec., 1900

A. Permanent capital stock : total amount authorized, $1,000,000 ; total amount subscribed, $108,800, as more particularly set out in Schedule A hereto

Schedule A.

(a) —Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.			
		$	$ c.	$ c.	$ c.
1. Partly called	1,088	100	108,800 00	47,767 58	61,032 42
Totals	1,088	100	108,800 00	47,767 58	61,032 42

List of Shareholders as at 31st December 1897.

(Not printed.)

B. Terminating or withdrawable stock : total amount subscribed, $285,700, made up as follows :—

10 shares fully paid stock in force at $100 per share, on which there has been paid in $866.66 ; 239 shares "Prepaid" stock (other than above) in force at $100 per share, on which there has been paid in $9,293 01 ; 2,608 shares instalment stock (payable by fixed periodical payments) in force at $100 per share, on which there has been paid in $16,522.05. Total number of shares 2,857, subscribed by 595 shareholders, who have paid thereon the total of $26,681.72

SCHEDULE B.

	Fully paid.		Prepaid.		Instalment.		Total.
	No.	Amount.	No.	Amount.	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$		$		$	$
Number and amount in force at 31st Dec., 1896.	....	....	325	32,500	1,958	195,800	228,300
Number and amount issued during 1897.....	10	1,000	69	6,900	1,629	162,900	170,800
Gross total in force at any time in 1897.....	10	1,000	394	39,400	3,587	358,700	399,100
Deduct as follows:							
Withdrawn and paid off during 1897.....	....	.....	94	9,400	335	33,500	
Retired by Corporation during 1897.....	..	.....	39	3,900	420	42,000	
Forfeited and lapsed during 1897.....	...	.. ....	.....	.....	162	16,200	
Transferred during 1897.....	....	.....	22	2,200	62	6,200	
Total deduction	...	. ....	155	15,500	979	97,900	113,400
Net total remaining in force at 31st Dec., 1897.	10	1,000	239	23,900	2,608	260,800	285,700
Total amount distributed or credited in 1897: (1) As interest, $283.50. Rate of such interest, per cent. per annum, 6 per cent. (2) As dividends out of profits, $5,689.67. Rate or rates per cent. of such dividends, 7, 8, 9 and 12 per cent.							

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

Item No.		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	A.—*Permanent Building Society Capital Stock or Shares.*		
8. (a)	Permanent Building Society capital fully called; total called, $8,800.00; total paid thereon, $8,758.22*, extended, less premium.	7,261 24	
8. (b)	Permanent Building Society capital, no specific call made, $100,000; total paid thereon, $48,875.01*, extended, less premium.....	40,506 34	
4. (d)	Dividends declared in respect of (8), but not yet paid	1 796 58	
5. (e)	Unappropriated profits in respect of (8).....	9 27	
7. (g)	Contingent fund in respect of (8)	500 00	
			50,073 43
	B.—*Terminating Capital Stock or Shares.*		
14. (a)	Fully paid stock: total in force, 10 shares at $100 per share..	866 66	
15. (b)	Profits or accrued interest on (14) credited or appropriated but not yet paid.	14 99	
17. (d)	Prepaid stock: total in force, 239 shares at $100 per share, on which has been paid	9,293 01	
18. (e)	Profits or accrued interest on (17) credited or appropriated but not yet paid	708 26	
19. (f)	Profits or accrued interest on (17) not credited or appropriated	276 00	
20. (g)	Instalment stock: total issue now in force 2,608 shares at $100 per share $260,800 on which has been paid	16,522 05	
			27,680 97
	LIABILITIES TO THE PUBLIC.		77,754 40
30.	Due on loans in process of completion or to pay assumed mortgages	.....	5,425 00
	Total actual liabilities	.....	83,179 40

* These payments were made by holders of permanent shares pursuant to By-law numbered 5 (*d*) On 27th May, 1898, a Directors' By-law was passed declaring the meaning and intent of the said By-law 5 (*d*).

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	60,747 78	
10. (*b*) Debts secured by mortgaged land held for sale	9,101 93	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	877 60	
		70,727 31
C.—*Debts not above enumerated for which the Corporation holds Securities as follows:*		
20. (*h*) Debts secured only by permanent stock or shares of the Corporation	7,694 00	
21. (*i*) Debts secured only by Terminating Stock or Shares of the Corporation	827 24	
22. (*j*) Debts secured by both Permanent and Terminating Stock of the Corporation	632 00	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	243 43	
		9,396 67
E.—*Cash.*		
32. (*b*) In bank		3,055 42
Total of assets owned beneficially by Corporation		83,179 40

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account.	Amount carried to capital account.		Total.
		Terminating capital.	Permanent capital, including reserve.	
	(Column 1).	(Column 2).	(Column 3).	(Column 4).
I.—Received by the Corporation for its own use.				
A.—*Balance from 31st December, 1896.*				
Item No.	$ c.	$ c.	$ c.	$ c.
(*b*) Cash (not already shown under (1))		400 00		400 00
2. (i) On hand	1,488 10	2,476 00		3,964 10
3. (ii) In bank	5 42			5 42
B.—*Sums Received Wholly or Partly on Capital Stock.*				
4. (*a*) Payments on Joint Stock Permanent Capital			14,744 68	14,744 68
6. (*c*) Sales of fully paid Building Society Stock		866 66		866 66
7. (*d*) Sales of prepaid Building Society Stock		558 84		558 84
8. (*e*) Dues on Instalment Building Society Stock		10,768 67		10,768 67
C.—*Receipts on Account of Investments, Loans or Debts.*				
(*a*) On Mortgages of Realty :—				
10. (i) Principal		6 249 12		6,249 12
11. (ii) Interest	5,968 92			5,968 92
(*b*) On other securities :—				
12. (i) Principal		10 00	68 00	78 00
13. (ii) Interest or dividends	411 14			411 14
(*c*) Unsecured debts :—				
15. (ii) Interest transferred from expense fund	615 00			615 00
D.—*Receipts from Real Estate Owned Beneficially by Corporation.*				
17. (*b*) Rent	50 00			50 00
Miscellaneous.				
21. (*d*) Fines	97 19			97 19
22. (*e*) Forfeitures or Lapses. (*Extend into Column 1*)	251 80			251 80
F.—*Borrowed Money.*				
29. (*e*) Borrowed otherwise, viz. : assumed mortgages		3,550 00		3,550 00
(*f*) Interest capitalized		1,844 09		1,844 09
G.—*Receipts from other Sources, viz.:*				
30. (*a*) Profits on withdrawal	18 33			18 33
(*b*) Transfer fees	10 00			10 00
(*c*) Net expense fund	8,849 13			8,849 13
Totals	17,765 03	26,723 38	14,812 68	59,301 09

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account.	Amount carried to capital account.		Total.
		Terminating capital.	Permanent capital, including reserve.	
	(Column 1.)	(Column 2.)	(Column 3.)	(Column 4.)
	$ c.	$ c.	$ c.	$
I.—Expended on Corporation Account.				
A.—Sums loaned or invested on Capital Account.				
Item No.				
1. (*a*) Loaned on Mortgages of Realty		29,512 90		29,512 90
(*b*) Loaned or invested in other securities, viz.:				
2. (i) On company's stock		727 24	2,140 00	2,867 24
3. (ii) On company's stock		700 00		700 00
7. (*d*) Incumbrances on realty paid off	204 45	427 30		631 75
(*c*) Interest due and unpaid in 1896	514 15			514 15
B.—Expended on Stock Account.				
8 Dividends paid on permanent stock	3,162 40			3,162 40
9. Dividends paid on terminating stock	683 18			683 18
10. Interest paid on terminating stock (allowed on prepayments)	105 46			105 46
11. Paid for terminating stock withdrawn	178 04	5,778 88		5,956 92
13. Profits paid on (11) and (12)		18 33		18 33
15. Terminating stock forfeited or lapsed		251 80		251 80
Dividends on terminating stock capitalized	1,844 09			1,844 09
C.—Borrowed money (other than foregoing) or interest thereon paid, viz.:				
18. (*a*) Bank account (principal and interest)	27 29			27 29
D.—Management Expenses (other than foregoing):				
25. (*a*) Salaries and fees	2,494 45			
26. (*b*) Commission or brokerage	10 70			
27. (*c*) Advances to agents	4,733 13			
28. (*d*) Stationery, postage, printing and advertising	564 66			
29. (*e*) Law costs	240 36			
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	210 85			
31. (*g*) Travelling expenses	9 55			
33. (*a*) Office furniture	9 50			
34. (*b*) General (premiums on bonds, telegrams, express, care of office, etc.)	334 27			
36. (*d*) Balance expense fund in hand	241 66			
				8,849 13
F.—Balance.				
37. (*a*) Interest due and unpaid	1,121 03			1,121 03
(*b*) Cash in bank	1,075 81	1,979 61		3,055 42
Totals	17,765 03	39,396 06	2,140 00	59,301 09

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 9.6% ; on other securities, 9.1%.	
7. Of the mortgages held by the Corporation $69,849.71 is on realty situate in Ontario.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897—Number, 5 ; amount, $2,950.	
10. Aggregate market value of the land mortgaged to the Corporation, $121,200.	
11. How often are the securities held by the Corporation valued? Once (mortgages are on instalment plan).	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Secretary, $2,000 ; Treasurer, $1,000.	
13. When were the accounts of the Corporation last audited? Audited monthly, with completed audit at end of year.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed), J. E. Laidlaw, London, Ont.; W. A. Eastwood, London, Ont.	

CANADIAN HOMESTEAD LOAN AND SAVINGS ASSOCIATION.

Head Office, Toronto, Ontario.

Incorporated by declaration under The Building Societies Act, R. S. O. 1877, c. 164; the declaration was filed with the Clerk of the Peace for the County of York, 24th September, 1886 (Decl. Book II., 63).

For the lending and the borrowing powers see Loan Corporations Act, R.S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Canadian Homestead Loan and Savings Association of Toronto, Ont., at the 30th September, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 72 King street east, in the City of Toronto, in the Province of Ontario.

The Board is constituted of nine directors, holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
John Hillock	President	Toronto, Ont.	9th November, 1897.	24th October, 1898.
John Firstbrook	Vice-President	"	"	"
Richard T. Coady	Treasurer	"	"	"
Rev. E. T. Fox	Director	"	"	"
R. Chalkley	Director	"	"	"
James Brandon	Director	"	"	"
Fred'k. Diver	Director	"	"	"
Henry F. Perry	Director	"	"	"
A. J. Pattison	Manager	"		

A. Permanent capital stock: Total amount authorized, $500,000; total amount subscribed, $92,100, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*a*) *Fixed and Permanent Capital Stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st Dec., 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value.	—		
		$	$ c.	$ c.	$ c.
1. Fully paid	102	100	10,200 00	10,200 00	.....
3. Instalment (payable by fixed periodical payments and is still in process of payment, subject to call)	819	100	81,900 00	7,976 92	73,923 08
Totals	921	.....	92,100 00	18,176 92	73,923 08

LIST OF SHAREHOLDERS AS AT 30TH SEPTEMBER, 1897.

(Not printed.)

B Terminating or withdrawable stock: Total amount subscribed, $397,550, made up as follows:—

396 shares fully paid stock at $100 per share $39,600, on which there has been paid in $39,600.00; 375 shares "prepaid" stock (other than above) at $100 per share $37,500, on which there has been paid in and credited $20,287.70; 549¼ $200 shares instalment stock (payable by fixed periodical payments) at $1 per share per month, and 2,106 $100 shares instalment stock (payable by fixed periodical payments) at 50c. per share per month, $320,450, on which there has been paid in $68,983.80. Total number of shares 3,426, subscribed by shareholders, who have paid thereon the total of $128,871.50.

SCHEDULE B.

	Fully paid.		Prepaid.		Instalment.		Total.
	No.	Amount.	No.	Amount.	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$		$		$	$
Number and amount in force at 30th Sept., 1896	355	35,500	333	33,300	837½ 1,379	167,500 137,900	374,200
Number and amount issued during 1897	63	6,300	76	7,600	1,523	152,300	166,200
Gross total in force at any time in 1897	418	41,800	409	40,900	3,739½	457,700	540,400
Deduct as follows: (No. of shares / Amount)		$					
Withdrawn and paid off during 1897		17	1,700	14	1,400	1,084¼	137,250	140,350
Retired by Corporation during 1897	None.							
Converted into permanent stock during 1897	None.							
Forfeited and lapsed during 1897	None.							
Transferred to prepaid		5	500					500
Transferred to fully paid				20	2,000			2,000
Total deductions		22	2,200	34	3,400	1,084¼	137,250	142,850
Net total remaining in force at 30th Sept., 1897	396	39,600	375	37,500	2,655¼	320,450	397,55
Total amount distributed or credited in 1897:		$ c.		$ c.		$ c.	$ c.
(2) As dividends out of profits		1,957 48		922 44		3,207 86	6,087 78
Rate or rates per cent. of such dividends 5%.							

Balance Sheet as at 30th September, 1897.

Capital and Liabilities

Dr.

Item No.		$ c.	$ c.
	Capital (Liabilities to Stockholders or Shareholders)		
	A.—*Permanent Capital Stock or Shares.*		
1.	(*a*) Ordinary capital fully called: Total called $10,200; total paid thereon	10,200 00	
2.	(*b*) Ordinary capital, 5% called: Total called $4,095; total paid thereon	7,976 92	
5.	(*c*) Unappropriated profits in respect of (1), (2) or (3)	122 05	
			18,298 97
	B.—*Terminating Capital Stock or Shares.*		
14.	(*a*) Fully paid stock: Total in force 396 shares at $100 per share.	39,600 00	
17.	(*d*) Prepaid stock: Total in force 375 shares at $100 per share, on which has been paid	20,287 70	
20.	(*g*) Instalment stock: Total issue now in force 2,106 shares at 50 cents per month per share of $100, on which has been paid	68,983 80	
	Instalment stock: Total issue now in force 549¼ shares at $1.00 per month per share of $200, on which has been paid		
21.	(*h*) Profits or accrued interest on 20 credited or appropriated but not yet paid out	11,342 83	
			140,214 33
23.	(*j*) Instalments or premiums paid on (20) in advance (included in 20).		
	C.—*Liabilities to Stockholders or Shareholders other than as already shown under A or B, viz.:*		
24.	Reserve	8,200 00	
25.	Profit and loss	3 96	
			8,203 96
	Liabilities to the Public.		166,717 29
27.	Deposits	11,165 90	
40.	Other liabilities to the public, viz.:—		
41.	(*a*) Sundry small accounts	15 50	
42.	(*b*) Interest and premiums paid in advance	18 34	
			11,199 74
	Total actual liabilities		177,917 03

Balance Sheet as at 30th September, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
B.—Debts secured by Mortgages of Land.		
9. (*a*) Debts (other than item 10) secured by mortgages of land	152,684 51	
10. (*b*) Debts secured by mortgaged land held for sale	10,034 21	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	2,926 86	
12. (*d*) Of the debts mentioned in item 9, the sum of $6,450 is due by directors or officers of the Corporation. (*Not extended*) $6,450.		165,645 58
C.—Debts not above enumerated for which the Corporation holds securities as follows:		
21. (*i*) Debts secured only by Terminating Stock or shares of the Corporation	1,049 26	
22. (*j*) Debts secured by stock collaterals at short dates or call	7,840 32	8,889 58
E.—Cash.		
32. (*b*) In bank	1,775 11	1,775 11
F.—Assets not Hereinbefore mentioned.		
37. (*a*) Office furniture and fixtures	500 00	
38. (*b*) Office rents	355 28	
39. (*c*) Stock expense account	500 00	
40. (*d*) Sundry accounts receivable	251 45	1,606 73
Total of assets owned beneficially by Corporation		177,917 00

Cash Account.

Receipts for the year ending 30th September, 1897.

Item No.		Amount carried to capital account. Terminating capital. (Column 2).	Amount carried to capital account. Permanent capital, including reserve. (Column 3)	Total. (Column 4.)
	I.—Received by the Corporation for its own use.			
	A.—*Balances from 30th September, 1896.*	$ c.	$ c.	$ c.
1.	(*b*) Cash (not already shown under (1))			
3.	(ii) In bank (Dr. $138.11)			
	B.—*Sums received Wholly or Partly on Capital Stock.*			
4.	(*a*) Calls on Permanent Capital		1,136 32	1,136 32
6.	(*c*) Sales of fully paid Building Society Stock	5,300 00		
7.	(*d*) Sales of prepaid Building Society Stock	4,128 60		
8.	(*e*) Dues on Instalment Building Society Stock	20,486 12		
				29,914 72
	C.—*Receipts on Account of Investments, Loans or Debts.*			
	(*a*) On Mortgages of Realty:			
10.	(i) Principal			19,633 94
11.	(ii) Interest			7,811 25
	(*b*) On other Securities:			
12.	(i) Principal			16,762 62
13.	(ii) Interest or dividends			694 80
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*			
16.	(*a*) Sales (not included in any of foregoing items)			362 71
17.	(*b*) Rents			263 50
	E.—*Miscellaneous.*			
18.	(*a*) Commission, Brokerage (or Remuneration as Corporate Agent, Trustee, etc.), valuators fees			26 00
19.	(*b*) Premium or Bonus on Loans			511 19
20.	(*c*) Membership or Entry Fees (being income of Corporation)			18 00
21.	(*d*) Fines and Fees			34 55
22.	(*e*) Discharge of Mortgages			18 00
24.	(*g*) Solicitors Fees			5 30
	(*h*) Commissions, Insurance			38 73
	F.—*Borrowed Money.*			
26.	(*b*) Borrowed by taking deposits			10,802 36
	G.—*Receipts from other sources, viz.*			
30.	(*a*) For Fire Insurance on account of loss			42 50
	(*b*) Agents, etc			38 00
	Totals	29,914 72	1,136 32	88,114 49

Cash Account.

Expenditure for the year ending 30th September, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. — Terminating capital. (Column 2.)	Total. (Column 4.)
I.—Expended on Corporation Account.			
A.—*Sums Loaned or Invested on Capital Account.* Item No.	$ c.	$ c.	$ c.
1. (*a*) Loaned on Mortgages of Realty			41,157 35
(*b*) Loaned or invested in other securities, viz.:			
2. (i) On share and stock collaterals			2,127 50
B.—*Expended on Stock Account:*			
8. Dividends paid on permanent stock. (*Extend into column 1*)	900 82		
9. Dividends paid on terminating stock. (*Extend into column 1*)	2,396 38		3,297 20
11. Paid for terminating stock withdrawn. (*Extend into column 1 or 2; or divide between 1 and 2, as case may be*)		25,362 33	25,362 33
13. Profits paid on (11) and (12). (*Extend as in 11*)	2,878 47		2,878 47
C.—*Borrowed Money (other than foregoing) or Interest thereon Paid, viz.:*			
18. (*a*) Bank account (principal and interest)	105 95		105 95
19. (*b*) Deposits: Principal, $5,552.17; interest, $353.12.			5,905 29
D.—*Management Expenses (other than foregoing).*			
25. (*a*) Salaries and fees	2,275 00		
26. (*b*) Commission or brokerage 27. (*c*) Advances to agents.	815 85		
28. (*d*) Stationery, postage, printing and advertising	285 39		
29. (*e*) Law costs	43 53		
30. (*f*) Fuel, rent, taxes (other than 32) and rates	883 22		
31. (*g*) Expenses	708 24		
32. (*h*) Insurances or taxes advanced on property mortgaged to the Corporation, including repairs	264 12		5,275 35
E.—*Other Expenditures, viz.*			
33. (*a*) Fire insurance loss returned	42 50		
34. (*b*) Valuation fees	49 33		91 83
35. (*c*) Bank over draft 1896 paid			138 11
F.—*Balance.*			
(*b*) Cash in bank			1,775 11
Totals	11,648 80	25,362 33	88,114 49

Miscellaneous Statement for the Year Ending 30th September, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898. None issued.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None issued.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. None issued.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4%...	353 12
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, about 6¼ %; on other securities, about 5 %	9,011 24
7. Of the mortgages held by the Corporation $152,684.51 is on realty situate in Ontario,	
8. Loans written off or transferred to real estate account during 1897...	4,615 57
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897. No., . Amount, none.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Secretary, Manager and Treasurer, $5,000.	
13. When were the accounts of the Corporation last audited? 30th September, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed): Chas. Arnoldi, Toronto; J. C. Gibson, Toronto.	

THE CANADIAN MUTUAL LOAN AND INVESTMENT COMPANY.

Head Office, Toronto.

Incorporated under the Building Societies Act (R. S. O. 1887, c. 169), by declaration filed with the Clerk of the Peace for the County of York, on 13th June, 1890. (Decl. Book II., 75.)

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O., 1897, c. 205.

Annual Statement

Of the condition and affairs of the Canada Mutual Loan and Investment Company of Toronto, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 51 Yonge street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of three directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
J. J. Withrow	President	Toronto, Ont	February, 1897	February, 1898.
A. J. Jackson	Vice-President and Manager	"	"	"
J. H. Mitchell	Secretary	"	"	"

A.—Permanent capital stock: Total amount authorized, $5,000,000; total amount subscribed, $9,300, as more particularly set out in Schedule A hereto.

Schedule A.

(a)—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.		
	No. of shares.	Par value.	$
1. Fully paid	93	$ 100	9,300 00
Totals	93	100	9,300 00

List of Shareholders as at 31st December, 1897.

(Not printed.)

B. Terminating or withdrawable stock: Total amount subscribed, $4,083,300, made up as follows:

5,665 shares "prepaid" stock (other than above) at $100 per share, $566,500, on which there has been paid in, $249,046.04; 35,168 shares instalment stock (payable by fixed periodical payments) at $100 per share, $3,516,800, on which there has been paid in $864,167.03; total number of shares 40,833, subscribed by 6,707 shareholders, who have paid thereon the total of $1,113,213.07.

SCHEDULE B.

Shares of terminating or withdrawable stock.	Prepaid. No.	Prepaid. Amount.	Instalment. No.	Instalment. Amount.	Total.
		$ c.		$ c.	$ c.
Number and amount in force at 31st Dec., 1896..	5,787	260,888 67	36,425	782,819 61	1,043,708 28
" issued during 1897, from Dec., 1896, to Nov., 1897, inclusive	104	6,528 49	6,944	185,785 68	192,314 17
Gross total in force at any time in 1897	5,891	267,417 16	43,369	968,605 29	1,236,022 45
Deduct as follows:					
Withdrawal and paid off during 1897.....	28	1,273 73	5,728	103,323 67	104,597 40
Retired by Corporation during 1897	91	3,847 82	.....	.....	3,847 82
Converted into permanent stock during 1897.	107	4,817 70	.....	.....	4,817 70
Forfeited and lapsed during 1897.....	.....	.....	2,473	1,114 59	1,114 59
Expense $50 P. P. stock.....	.....	8,410 27	.....	.....	8,410 27
" $40 "	.....	21 60	.....	.....	21 60
Total deduction.....	226	18,371 12	8,201	104,438 26	122,809 38
Net total remaining in force at 31st Dec., 1897 ..	5,665	249,046 04	35,168	864,167 03	1,113,213 07

Total amount distributed or credited in 1897:	
Dividend of 11 per cent. on ordinary shares.....	83,752 34
" 11 " on reduced payment shares.....	3,822 59
" 11 " on short term terminating shares	10 81
" 8 " $40 prepaid shares	58 18
" 10 " 50 " series B	14,215 95
" 8 " 50 " " Oa to Od	6,243 60
	108,103 44

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

DR. *Capital and Liabilities.*

Item No.		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS.)		
	A.—*Permanent Capital Stock or Shares.*		
1.	(*a*) Ordinary capital fully called: total called, $9,300; total paid thereon (93 shares at $100 a share)	9,300 00	
			9,300 00
4.	(*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid (interest paid 1st January, 1898, $329	.....	
	B.—*Terminating Capital Stock or Shares.*		
17.	(*d*) Prepaid stock: total in force 5,665 { shares at $50 per share, on which has been paid	231,172 86	
	" 40 " "	726 93	
18.	(*e*) Dividend ..... { on $50 P. P. stock	20,459 55	
	" 40 "	58 15	
20.	(*g*) Instalment stock: total issue now in force 35,168 shares at 60 and 30 cents per share of $100, on which has been paid.....	864,167 03	
21.	(*h*) Profits or accrued interest on (20) credited or appropriated but not paid out for year 1897	87,585 74	
			1,204,170 26
	C.—*Liabilities to Stockholders or Shareholders other than as already shown under A and B, viz.*		
24.	Contingent fund	1,497 10	
25.	Reserve fund	21,455 95	
26.	Balance profit and loss account....	11,360 87	
27.	Borrowers' guarantee fund	99 43	
			34,413 35
	Total actual liabilities.....		1,247,883 61

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	915,934 82	
10. (*b*) Debts secured by mortgaged land held for sale	44,575 95	
11. (*c*) Interest due and accrued on item 9 and not included therein	39,162 84	
" " 10 "	9,525 07	
		1,009,198 68
C.—*Debts not above enumerated for which the Corporation holds securities as follows:*		
21. (*i*) Debts secured only by terminating stock or shares of the Corporation	85,993 00	
22. (*j*) Debts secured by real estate	19,392 92	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein, charges on real estate	3,790 11	
		109,176 03
E.—*Cash.*		
31. (*a*) On hand	2,361 22	
32. (*b*) In banks and trusts company	113,867 36	
		116,228 58
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Agents' balances	1,417 21	
38. (*b*) Bills receivable	120 60	
39. (*c*) Office furniture	2,725 29	
40. (*d*) Interest receivable	18 03	
41. (*e*) " current for December, 1897	4,999 88	
42. (*f*) Premium " "	3,999 91	
		13,280 32
Total of assets owned beneficially by Corporation		1,247,883 61

Cash Account.

Receipts for the year ending 31st December, 1897.

—	Amount carried to earnings, maintenance or contingent account. Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Amount carried to capital account. Permanent capital, including reserve (Column 3)	Total. (Column 4)
I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.	$ c.
Item No. A.—*Balances from 31st December, 1896.*				
1. (*a*) Capital stock				75,168 84
B.—*Sums received wholly or partly on Capital Stock.*				
4. (*a*) Calls on permanent capital			10,300 00	10,300 00
7. (*d*) Sales of prepaid Building Society Stock		6,528 49		
8. (*c*) Dues on instalment Building Society stock		184,671 09		191,199 58
C.—*Receipts on account of investments, loans or debts.*				
(*a*) On Mortgages of Realty :—				
10. (i) Principal, including transfers to real estate		87,875 01		
11. (ii) Interest, including December, 1897, accretions		62,673 10		
(iii) Premiums, including December, 1897, accretions		48,924 01		
(*b*) On other securities :—				
12. (i) Principal, share loans repaid		17,585 00		
13. (ii) Interest or dividends, interest on premiums, taxes, etc		1,198 84		
Interest, bills receivable		67 35		218,323 31
D.—*Receipts from real estate owned beneficially by Corporation.*				
17. (*b*) Rents received from real estate		2,815 10		2,815 10
E.—*Miscellaneous.*				
18. (*a*) Contributions from ordinary reduced permanent and P. P. stock	46,259 68			
20. (*c*) Membership or entry fees (being income of Corporation)	6,283 00			52,542 68
21. (*d*) Fines		3,747 57		
22. (*c*) Forfeitures or lapses. (*Extend into Column 1*)		1,114 59		4,862 16
G.—*Receipts from other sources, viz. :—*				
30. (*a*) Transfer and withdrawal fees		982 00		
(*b*) Profits from withdrawals		9,285 97		
(*c*) Interest bank account		1,978 99		
(*d*) Contingent Fund		25 14		
Bills receivable		270 00		
Agents' balances		766 14		
Mortgage tax		1,576 27		14,884 51
Totals	52,542 68	432,084 66	10,300 00	570,096 18

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1)	Amount carried to capital Account. Terminating capital. (Column 2.)	Amount carried to capital Account. Permanent capital, including reserve. (Column 3).	Total. (Column 4.)
	I. Expended on Corporation Account.				
	A.—*Sums Loaned or Invested on Capital Account.*	$ c.	$ c.	$ c.	$ c.
1.	(*a*) Loaned on Mortgages of Realty		186,036 21		
	(*b*) Loaned or invested in other Securities, viz.:				
2.	(i) Loans on Shares		45,243 00		
3.	(ii) Real Estate		15,062 42		
7.	(*d*) Incumbrances on Realty paid off Profit and Loss, Real Estate		1,166 38		247,508 01
	B.—*Expended on Stock Account.*				
8.	Dividends paid on Permanent Stock		130 50		
10.	Interest paid on Terminating Stock, $50 prepaid		17,146 25		
11.	Paid for Terminating Stock withdrawn		104,597 40		
13.	Profits paid on (11) and (12) (*Extend as in 11*)			2,200 00	
14.	Paid for Terminating Stock retired. (*Extend into Column 2*) $50 prepaid		3,847 82		
16.	Terminating Stock converted into Permanent. (*Extend into Column 2*)		4,817 70		130,539 67
	C.—*Borrowed Money (other than foregoing) or interest thereon paid, viz.:*				
19	(*b*) Deposits: Principal, $2,606.33; Interest, $50.02		2,656 35		
	D.—*Management Expenses (other than foregoing).*				
25.	(*a*) Salaries and fees, Officers, Directors, Solicitors, Auditors and Fees on Loans	18,224 06			
	Trustee Fees	1,783 62			
26.	(*b*) Commission or Brokerage	12,847 24			
27.	(*c*) Advances to Agents	3,158 55			
28.	(*d*) Stationery, postage, printing and advertising, exchange, etc	4,614 77			
29.	(*e*) Law costs	60 50			
30.	(*f*) Fuel, taxes (other than in 32) and rates	1,100 00			
31.	(*g*) Travelling expenses	1,538 11			
32.	(*h*) Registration Fees, special Valuation Fees and Trusts Co. Fees	599 00			
	(*i*) Insurances or taxes advanced on property mortgaged to the Corporation		11,103 02		
	(*j*) Office assistance	7,508 51			51,434 36
	E.—*Other Expenditures, viz.:*				
33.	(*a*) Discount Advance Payments		336 88		
34.	(*b*) Income Tax		2,859 97		
35.	(*c*) Expense, $50 Prepaid Stock		8,410 27		
36.	(*d*) Expense, $40 Prepaid Stock		21 60		
	Reserve Fund			2,901 99	5,101 99
	F.—*Balance.*				
37.	(*a*) Cash on hand		2,361 22		
	(*b*) Cash in various banks		106,654 52		109,015 74
	Balance Credit Profit and Loss Account	1,108 32			1,108 32
	Totals	52,542 68	512,451 51	5,101 99	570,096 18

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4%; on debentures, none; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 10⅛%; on other securities, 10⅛%.	
7. Of the mortgages held by the Corporation, $156,869.99, is on realty situate in Ontario, and $759,064.83 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	15,062 42
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No., 29; amount.....	27,425 00
10. Aggregate market value of the land mortgaged to the Corporation.	2,146,000 00
11. How often are securities held by the Corporation valued? As occasion may require.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Secretary, $5,000; General Manager, $5,000; Cashier, $2,000.	
13. When were the accounts of the Corporation last audited? To December, 31st 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898, W. H. Cross, F.C.A., Toronto; Jas. Hardy, F.C.A., Toronto.	

THE CANADIAN SAVINGS AND LOAN COMPANY OF LONDON, CANADA.

Head Office, London, Ontario.

Incorporated under the Building Societies Act (Consol. Stat U. C., c. 53) by declaration filed with the Clerk of the Peace for the County of Middlesex on the 2nd September, 1875 (Decl. Book I. 67.)

The lending and borrowing powers are governed by the Loan Corporations Act, R. S. O., 1897, c. 205.

Annual Statement

Of the condition and affairs of the Canadian Savings and Loan Company of London, Canada, at the 31st May, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 420 Richmond street, in the City of London, in the Province of Ontario.

The Board is constituted of six directors, holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Name of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Robert Fox.....	President	London, Ont ..	24th June, 1896	30th June, 1897.
Robert Lewis.....	Vice-President ...	" ..	"	"
John Christie.....	Director.....	" ..	"	"
John M. Jones	Director.....	" ..	" ...	"
A. B. Cox.....	Director	" ..	15th March, 1897 ..	"
F. W. Thomas.....	Director.....	Montreal, Que.	24th June, 1896....	
M. H. Rowland	Manager	London, Ont ..	1st March, 1897....	

A Permanent capital stock : Total amount authorized, unlimited ; total amount subscribed, $733,500, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a) Fixed and Permanent Capital Stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	Number of shares.	Par value of shares.	—		
		$ c.	$ c.	$ c.	$ c.
1. Fully paid	14,670	50 00	733,500 00	733,500 00	.....
Instalment (payable by fixed periodical payments and still in process of payment) *	330	50 00	16,500 00	6,639 13	9,860 87
Totals	15,000	.....	750,000 00	740,139 13	9,860 87

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

B. Terminating or withdrawable stock: Total amount subscribed, $16,500, made up as follows: †330 shares fully paid stock at $50 per share, $16,500, on which there has been paid in $3,328.42; profits, add $3,310.71; total number of shares , subscribed by shareholders, who have paid thereon the total of $6,639.13.

BALANCE SHEET AS AT 31ST MAY, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES OF STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary capital fully called: Total called, $733,500; Total paid thereon	733,500 00	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	210,000 00	
7. (*g*) Contingent fund in respect of (1), (2) or (3)	19,048 92	
		962,548 92
B.—*Terminating Capital Stock or Shares.*		
20. (*g*) Accumulations: 330 shares at $50 per share, $16,500, on which has been paid	3,328 42	
21. (*h*) Profits or accrued interest on (20) credited or appropriated but not paid out	3,310 71	
		6,639 13
		969,188 05
LIABILITIES TO THE PUBLIC.		
27. Deposits	708,196 29	
28. Interest on deposits, due, or accrued or capitalized (included in 27).		
29. Debentures issued and payable in Canada	163,110 00	
30. Interest due and accrued on (29)	2.898 56	
		874,204 85
Total actual liabilities	.....	1,843,392 90

* The sum of $9,860.87 has since been paid upon accumulating stock and the 330 shares have been made permanent. On the 31st. December, the whole of the subscribed capital $750,000 was fully paid.

† Since converted into permanent capital.

BALANCE SHEET AS AT 31ST MAY, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :—		
2. (i) At London, Ont., held in freehold	24,000 00	
5. (*b*) Freehold land (including buildings) other than foregoing	7,279 90	31,279 90
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	1,746,545 97	
10. (*b*) Debts secured by mortgaged land held for sale	9,829 20	1,756,375 17
(*d*) Of the debts mentioned in items 9 and 11 nothing is due by directors or officers of the Corporation.		
C.—*Debts not above Enumerated for which the Corporation holds Securities as follows.*		
20. (*h*) Debts secured only by permanent stock or shares of the Corporation.		43,912 83
E.—*Cash.*		
31. (*a*) On hand	1,518 11	
32. (*b*) In bank	10,306 89	11,825 00
Total of assets owned beneficially by Corporation		1,843,392 90

Cash Account.

Receipts for the year ending 31st May, 1897.

		Total. (Column 4.)
	I.—Received by the Corporation for its own use.	$ c.
	A.—*Balances from 31st May, 1896.*	
Item No.	(*b*) Cash (not already shown under (1)).	
3.	(ii) In bank	45,499 68
	B.—*Sums Received Wholly or Partly on Capital Stock.*	
4.	(*a*) Calls on permanent capital	3,350 00
8.	(*e*) On accumulating stock	3,767 01
	C.—*Receipts on account of investments, loans or debts.*	
	(*a*) On Mortgages of Realty :—	
10.	(i) Principal	265,637 02
11.	(ii) Interest	
	(*b*) On stocks :	
12.	(i) Principal	11,843 86
13.	(ii) Interest or dividends	
	D.—*Receipts from real estate owned beneficially by Corporation.*	
17.	(*b*) Rent of office building	835 00
	E.—*Miscellaneous.*	
21.	General interest	1,630 86
	F.—*Borrowed Money.*	
26.	(*b*) Borrowed by taking deposits	909,739 31
27.	(*c*) Borrowed on debentures	80,500 00
	Totals	1,322,802 74

Cash Account.

Expenditure for the year ending 31st May, 1897

Item No.		——	——	Total. (Column 4.)
	I. Expended on Corporation Account.			
	A.—*Sums Loaned or Invested on Capital Account.*	$ c.		$ c.
1.	(*a*) Loaned on Mortgages of Realty			241,890 46
	(*b*) Loaned or invested in other securities, viz.:—			
2.	(i) To shareholders on their stock			8,785 00
	B.—*Expended on Stock Account.*			
8.	Dividends paid on permanent stock. (*Extend into Column 1*)			44,010 00
9	Dividends paid on accumulating stock. (*Extend into Column 1*)			379 18
16.	Terminating stock converted into permanent. (*Extend into Column 2*)			3,350 00
	C.—*Borrowed Money (other than foregoing) or interest thereon paid, viz.:*—			
19.	(*b*) Deposits: Principal, $907,904.43; Interest, $26,688.26			934,592 69
20.	(*c*) Debentures issued in Canada: Principal, $59,500.00; Interest, $6,414.27			65,914 27
	D.—*Management Expenses (other than foregoing).*			
25.	(*a*) Salaries and Fees			6,061 39
26.	(*b*) Commission or Brokerage			1,020 09
28.	(*d*) Stationery, Postage, Printing and Advertising			338 34
30.	(*f*) Fuel, Rent, Taxes (other than in 32) and rates			1,621 90
31.	(*g*) Travelling Expenses and Inspector's Salary			2,105 40
	E.—*Other Expenditures, viz.:*			
33.	(*a*) Insurance on office buildings, guarantee bonds and Land Mortgage Co. fee			172 50
34.	(*b*) Repairs to office building			698 97
35.	(*c*) Office furnishings, etc			37 55
	F.—*Balance.*			
27.	(*a*) Cash on hand	1,518 11		
	(*b*) Cash in bank	10,306 89		
				11,825 00
	Totals			1,322,802 74

Miscellaneous Statement for the Year Ending 31st May, 1897.

		$ c.
1.	Amount of debentures issued by the Corporation in Canada which will mature in 1898	61,175 00
2.	Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3.	Amount of other existing obligations of the Corporation which will mature in 1898 None.	
4.	Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898, including stock loans and overdue mortgages	718,727 69
5.	Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3.897 per cent.; on debentures, 4.36 per cent.; on debenture stock, none.	
6.	Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5.915 per cent.	
7.	Of the mortgages held by the Corporation $1,746,545 97 is on realty situate in Ontario, and none is on realty situate elsewhere.	
8.	Loans written off or transferred to real estate account during 1897	9,786 94
9.	Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No, 11; amount	34,581 30
10.	Aggregate market value of the land mortgaged to the Corporation, $2,998,450.	
11.	How often are the securities held by the Corporation valued? Annually.	
12.	(a) What officers of the Corporation are under bond and for what sum respectively? Manager, $5,000; teller, $5,000; accountant, $2,000, and ledger keeper, $2,000.	
13.	When were the accounts of the Corporation last audited? 21st December, 1897.	
14.	Names and address of the auditors respectively for 1897 and 1898. Thomas A. Browne, London, Ont.; A. T. McMahen, London, Ont.	

THE CANADIAN SAVINGS, LOAN AND BUILDING ASSOCIATION.

Head Office, Toronto, Ont.

Incorporated under the Building Societies Act, R S.O , 1887, c. 169, by declaration filed with the Clerk of the Peace for the County of Middlesex on 11th February, 1890, (Decl. Book 11., 71).

The lending and the borrowing powers are governed by the Loan Corporations Act, 1897, c. 205.

Annual Statement

Of the condition and affairs of the Canadian Savings, Loan and Building Association of Toronto, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the corporation is at No. 92 Church Street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of five directors holding office for one year.

The directors and chief executive officers of the corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
John A. Carlaw	President	Toronto	22nd Feb'y, 1898	28th Feb'y. 1899.
Daniel Rose	Vice-President	"	" "	" "
J. T. Scott	2nd Vice-President	"	" "	" "
W. J. Hambly	Managing Director	"	" "	" "
E. W. D. Butler.	Secretary	"	" "	" "

A. Permanent capital stock: total amount authorized, $5,000,000; total amount subscribed, $25,200, as more particularly set out in Schedule A hereto.

Schedule A.

(*a*) *Fixed and Permanent Capital Stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.			
		$	$ c.	$ c.	$ c.
Fully paid	257	100	25,700 00	25,200 00	.....
Totals	257	100	25,700 00	25,200 00	.....

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.
(Not printed.)

B. Terminating or withdrawal stock: Total amount subscribed, $1,242,000 made up as follows:
883 shares "prepaid" stock (other than above) at $100 per share; $88,300 on which there has been paid in $28,080; 11,537 shares instalment stock (payable at fixed periodical payments) at $100 per share; $1,153,700 on which there has been paid in $17,169.78; total number of shares 12,677, subscribed by 1,855 shareholders, who have paid thereon the total of $45,249.78.

SCHEDULE B.

	Prepaid.		Instalment.		Total.
	No.	Amount	No.	Amount	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$		$	$
Number and amount in force at 31st Dec., 1896	214	21,400	5,008	500,800	522,200
" issued during 1897	669	66,900	6,529	652,900	719,800
Gross total in force at any time in 1897	883	88,300	11,537	1,153,700	1,242,000
Deduct as follows:	No. of shares.	Amount			
Withdrawn and paid off during 1897	144	14,400			
Forfeited and lapsed during 1897	2,527	252,700			
Total deduction	2,671	267,100	2,671	267,100	267,100
Net total remaining in force at 31st December, 1897	883	88,300	8,866	886,600	974,900
Total amount distributed or credited in 1897:—					$ c.
(2) As dividends out of profits					3,018 50

Rate or rates per cent. of dividends on capital: 7% on permanent, 10% on withdrawable.

BALANCE SHEET AS AT 31ST DECEMBER, 1897.
Capital and Liabilities.

DR.

Item No.	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).	$ c.
	A.—*Permanent Capital Stock or Shares.*	
1. (*a*)	Ordinary capital fully called: total called, $25,700; total paid thereon	25,200 00
	B.—*Terminating Capital Stock or Shares.*	
17. (*d*)	Prepaid stock: Total in force 883 shares at $50 per share, on which has been paid	28,080 00
20. (*g*)	Instalment stock: Total issue now in force 8,866 shares at 60 and 30 cents per share, on which has been paid	17,169 00
21. (*h*)	Profits or accrued interest on (20) credited or appropriated but not paid out on instalment and prepaid	2,728 07
	LIABILITIES TO THE PUBLIC. None.	
	Total actual liabilities	73,177 85

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable property owned beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing		242 75
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land		55,989 21
C.—*Debts not above Enumerated for which the Corporation holds Securities as follows.*		
21. (*i*) Debts secured only by terminating stock or shares of the Corporation		1,480 44
D.—*Unsecured Debts.*		
27. (*a*) Office furniture	810 00	
28. (*b*) Quebec charter	575 00	
29. (*c*) In agents' hands	530 57	
30. (*d*) Promissory notes and other assets	785 39	
		2,700 96
E.—*Cash.*		
32. (*b*) In bank		12,764 49
Total of assets owned beneficially by Corporation		73,177 85

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account.		Total. (Column 4.)
			Terminating capital. (Column 2.)	Permanent capital, including reserve. (Column 3.)	
		$ c.	$ c.	$ c.	$ c.
I.—Received by the Corporation for its own use.					
	A.—*Balances from 31st December, 1896.*				
	(*b*) Cash (not already shown under (1)):				
3.	(ii) In bank	.....	.....	.....	841 34
	B.—*Sums Received wholly or partly on Capital Stock.*				
4.	(*a*) Calls on permanent capital	.....	.....	16,100 00	16,100 00
7.	(*d*) Sales of prepaid building society stock	5,600 00	22,680 20	.....	28,280 20
8.	(*e*) Dues on instalment building society stock	12,074 25	7,064 10	.....	19,138 35
	C.—*Receipts on Account of Investments, Loans or Debts.*				
	(*a*) On Mortgages of Realty :				
10.	(i) Principal	.....	.....	.....	1,149 34
11.	(ii) Interest	.....	.....	.....	3,755 23
	Totals	17,674 25	29,744 30	16,100 00	69,264 46

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4.)
	$ c.	$ c.	$ c.
I.—Expended on Corporation Account.			
A.—*Sums Loaned or Invested on Capital Account.*			
Item No.			
1. (*a*) Loaned on Mortgages of Realty			27,505 20
(*b*) Loaned or invested in other Securities, viz:—			
2. (i) Loaned on associations' stock			159 00
3. (ii) Improvements and repairs on mortgaged premises			471 55
B.—*Expended on Stock Account.*			
9. Dividends paid on terminating stock. (*Extend into column 1*)			2,992 73
10. Interest paid on terminating stock. (*Extend into column 1*)			
11. Paid for terminating stock withdrawn. (*Extend into column 1 or 2; or divide between 1 and 2, as case may be*)		6,536 41	
12. Paid for terminating stock matured. (*Extend as in 11*)		100 00	
13. Profits paid on (11) and (12). (*Extend as in 11*)		489 47	
15. Terminating stock forfeited or lapsed. (*Extend into column 2*)		571 36	7,125 88 571 36
D.—*Management Expenses (other than foregoing).*			
25. (*a*) Salaries and fees	1,932 00		
26. (*b*) Commission or brokerage, including agents fees	10,846 00		
27. (*c*) Advances to agents	1,435 88		
28. (*d*) Stationery, postage, printing and advertising	1,100 00		
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	520 00		
31. (*g*) Travelling expenses	150 00		
32. (*h*) Insurances or taxes advanced on property mortgaged to the Corporation	30 37		16,014 25
E.—*Other Expenditures, viz.:*—			
33. (*a*) Office furniture	195 00		
34. (*b*) Quebec charter	575 00		
35. (*c*) Promotion of business in Quebec	840 00		
36. (*d*) Ontario registration fee	50 00		1,660 00
F.—*Balance.*			
(*b*) Cash in bank			12,764 49
Totals	17,674 25	7,697 24	69,264 76

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 10½%; on other securities, 12%	
7. Of the mortgages held by the Corporation, $55,989.21 is on realty situate in Ontario.	
10. Aggregate market value of the land mortgaged to the Corporation, $110,400.	
11. How often are the securities held by the Corporation valued? Semi-annually.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Managing-Director, $2,000; Cashier, $500.	
13. When were the accounts of the Corporation last audited? Up to 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed), Geo. Macbeth, Toronto; A. H. Cochrane, Brussels.	

THE DOMINION PERMANENT LOAN COMPANY.

Head Office, Toronto, Ont.

Constating Instruments.

1890.—Declaration under R.S.O. 1887, c. 169; filed with the Clerk of the Peace for the County of York, 7th May, 1890. The original corporate name was *The Dominion Building and Loan Association.*

1897.—Act of the Dominion of Canada, 60-61 V. c. 85, extending the business of the Company to the whole Dominion; defining the borrowing powers of the Company; regulating its issue of debentures and debenture stock; providing for the prohibition of loans upon the Company's own stock; continuing the Company under the control of the Loan Corporations Act of Ontario.

1898.—Order in Council of Ontario, (29th January, 1898) changing the corporate name to the Dominion Permanent Loan Company,—to take effect from and after 1st August, 1898.

1898.—Act of the Dominion of Canada, confirming the said change of corporate name.

Annual Statement

Of the condition and affairs of the Dominion Permanent Loan Company of Toronto, Ontario, at the 31st December, 1897, and for the eight months ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 54 Adelaide street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of six directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
J. R. Stratton, M.P.P....	President	Peterborough..	26th January, 1896.	2nd March, 1898 ..
Thomas P. Coffee	Vice-President ..	Toronto	"	" ..
C. Kloepfer, M.P	Director.....	Guelph.....		
D. W. Karn.....	Director.....	Woodstock		
J. W. Lefevre, M.D	Director.....	Vancouver, B.C		
F. M. Holland	Manager and Secretary	Toronto	14th July, 1871	

A. Permanent capital stock: total amount authorized, $750,000; total amount subscribed, $632,800, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st Dec., 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	—		
		$ c.	$ c.	$ c.	$ c.
1. Ful'y paid	1,072	100	107,200 00	107,200 00	.....
2. Prepaid	4,983	100	498,300 00	216,998 72	281,301 28
3. Instalment (payable by fixed periodical payments and still in process of payment....	273	100	27,300 00	3,529 55	23,770 45
Totals	6,328	.....	632,800 00	327,728 27	305,071 73

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

B.—Terminating or withdrawable stock: total amount subscribed, $2,054.00, made up as follows:—

830¼ shares fully paid stock at $100 per share, $83,025, on which there has been paid in $83,025; 5,048 shares "prepaid" stock (other than above) at $100 per share, $504,800, on which there has been paid in $252,764 72; 14,665¾ shares instalment stock (payable by fixed periodical payments) at $100 per share, $1,466,575, on which there has been paid in $373,514 77. Total number of shares, 20,544, subscribed by shareholders, who have paid thereon the total of $709,304 49. (The Company has since paid off nearly all terminating shares.)

SCHEDULE B

		Fully paid.		Prepaid.		Instalment.		Total.
		No.	Amount.	No.	Amount.	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.			$		$		$	$
Number and amount in force at 30th April, 1897		507	50,700 00	5,155	258,114 72	16,686¾	362,758 62	67
Number and amount issued during 1897		350¼	35,025 00	.....	None.	361	60,272 74	95,297 74
Gross total in force at any time in 1897		857¼	85,725 00	5,155	258,114 72	17,047¾	423,031 36	766,871 08
Deduct as follows:	No. of shares.							
Withdrawn and paid off during 1897	1,910	22	2,200 00	14	700 00	1,846	34,666 09	37,566 09
Retired by Corporation during 1897	331	....	None.	8	400 00	323	13,879 00	14,279 00
Converted into permanent stock during 1897	115	5	500 00	85	4,250 00	25	573 00	5,323 00
Forfeited and lapsed during 1897	188	....	.....	.....	.....	188	398 50	398 50
Total deduction	2,544							
Net total remaining in force at 31st December, 1897		830¼	83,025 00	5,048	252,764 72	14,665¾	373,514 77	709,304 49
Total amount distributed or credited in 1897:—								
(1) As interest		....	4,852 24	.....	15,225 12	.....	28,065 59	
Rate of such interest, per cent. per annum, 5, 6, 8.35 and 8.80%.								
(2) As to dividends out of profits.								
Rate or rates per cent. of such dividends, 6%.								

* The Company has since paid off nearly all terminating shares.

Balance Sheet as at 31st December, 1897.

Capital and Liabilities.

Dr.

Item No.		$ c.	$ c.
	Capital (Liabilities to Stockholders or Shareholders).		
	A.– *Permanent Capital Stock or Shares.*		
1.	(*a*) Ordinary joint stock capital fully called: Total called, $107,200; total paid thereon	107,200 00	
2.	(*b*) Ordinary joint stock capital, called: Total called, $498,300; total paid thereon	216,998 72	
4.	(*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid. None.		
5.	(*e*) Unappropriated profits in respect of (1), (2) or (3) and (8)	10,591 64	
6.	(*f*) Reserve fund in respect of (1), (2) or (3) and (8)	13,035 90	
7.	(*g*) Contingent Fund in respect of (1), (2) or (3)	14,500 00	
8.	(*h*) Instalment permanent stock (payable by fixed periodical payments): total subscribed, $27,300, on which has been paid	3,529 55	
			365,855 81
	B.—*Terminating Capital Stock or Shares.*		
14.	(*a*) Fully paid stock: total in force, 830¼ shares at $100 per share	83,025 00	
15.	(*b*) Profits or accrued interest on (14) credited or appropriated but not yet paid	2,116 18	
17.	(*d*) Prepaid stock: total in force, 5,048 shares at $100 per share, on which has been paid	252,764 72	
18.	(*e*) Profits or accrued interest on (17) credited or appropriated but not yet paid	29,293 22	
20.	(*g*) Instalment stock: total issue now in force, 14,668¾ shares at $100 per share, $1,466,575, on which has been paid	371,702 11	
21.	(*h*) Profits or accrued interest on (20) credited or appropriated but not paid out	131,152 23	
23.	(*j*) Instalments or premiums paid on (20) in advance	1,812 66	
			871,866 12
			1,137,721 93
	Liabilities to the Public.		
27.	Deposits, none.		
28.	Interest on deposits, due, or accrued or capitalized, none.		
29.	Debentures issued in Canada	36,000 00	
30.	Interest due and accrued on (29)	407 44	
31.	Debentures issued elsewhere than in Canada, none.		
30.	Other liabilities to the public, viz.:—		
41.	(a) Sundry small accounts	1,487 06	
			37,894 50
	Total actual liabilities		1,275,616 43

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing	32,311 36	32,311 36
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	1,158,333 78	
10. (*b*) Debts secured by mortgaged land held for sale	37,277 01	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	21,678 24	1,217,289 06
C. *Debts not above enumerated for which the Corporation holds Securities as follows:*		
20. (*h*) Debts secured only by Permanent Stock or Shares of the Corporation	2,785 02	
21. (*i*) Debts secured only by Terminating Stock or Shares of the Corporation	21,400 29	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	234 71	24,420 02
E.—*Cash.*		
31. (*a*) On hand	17 96	
32. (*b*) In banks	173 78	191 74
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture		1,404 25
Total of assets owned beneficially by Corporation		1,275,616 43

Cash Account.

Receipts for the eight months ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account.		Total. Column 4.
		Terminating capital. (Column 2.)	Permanent capital, including reserve. (Column 3.)	
I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.	$ c.
Item No. A.—*Balances from 30th April, 1897.*				
1. (a) Capital account				
(b) Cash (not already shown under (1)):—				
2. (i) On hand				24 28
3. (ii) In bank				32,250 15
B.—*Sums received wholly or partly on Capital Stock.*				
4. (a) Calls on joint stock permanent capital			27,727 10	27,727 10
5. (b) Premiums on (4)	389 00			389 00
6. (c) Sales of fully paid building society stock		35,025 00		35,025 00
8. (c) Dues on instalment building society stock	11,297 71	60,272 74		71,570 45
C.—*Receipts on account of Investments, Loans or Debts.*				
(a) On Mortgages of Realty:				
10. (i) Principal	111,065 44			
11. (ii) Interest	72,563 54			183,628 98
(b) On other securities:				
12. (i) Principal	9,931 98			
13. (ii) Interest or dividends	1,604 71			11,536 69
D.—*Receipts from real estate owned beneficially by Corporation.*				
17. (b) Rents	593 35			593 35
E.—*Miscellaneous.*				
20. (c) Membership or entry fees (being income of Corporation) transfer fees	37 00			
21. (d) Fines	955 08			992 08
24. (g) Conversions of terminating stock into permanent stock. (*Extend into Column 3*)			6,117 46	6,117 46
F.—*Borrowed Money.*				
27. (c) Borrowed on debentures	11,500 00			11,500 00
G.—*Receipts from other sources, viz.:*				
30. (a) Sundry receipts	1,201 63			1,201 63
Totals	221,139 44	95,297 74	33,844 56	382,556 17

Cash Account.

Expenditure for the eight months ending 31st December, 1897.

	Amount carried to earnings, maintenance, or contingent account. (Column 1).	Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4).
1.—Expended on Corporation Account.	$ c.	$ c.	$ c.
Item No. A.—*Sums loaned or invested on Capital Account.*			
1. (*a*) Loaned on Mortgages of Realty	254,571 53		254,571 53
(*b*) Loaned or invested in other securities, viz.:			
2. (i) Stock Loans	4,761 00		4,761 00
B.—*Expended on Stock Account.*			
8. Dividends paid on permanent stock. (*Extend into column 1*)	10,060 64		
10. Interest paid on terminating stock. (*Extend into column 1*)	8,549 20		18,609 84
11. Paid for terminating stock withdrawn		37,566 09	
12. Paid for terminating stock matured. (*Extend as in 11*)		18,202 44	
14. Paid for terminating stock retired. (*Extend into column 2*)		14,279 00	
16. Terminating stock converted into permanent. (*Extend into column 2*)		5,323 00	
17. Terminating stock revived. (*Extend into column 1.*) None.			75,370 53
C.—*Borrowed money (other than foregoing) or interest thereon paid, viz.:*			
19. (*b*) Deposits; Principal, $; interest, none.			
22. (*c*) Debenture stock issued in Canada: Principal, $; interest, $680.93	680 93		680 93
D.—*Management Expenses (other than foregoing).*			
25. (*a*) Salaries and fees	10,190 56		
26. (*b*) Commission or brokerage	5,518 13		
28. (*d*) Stationery, postage, printing and advertising	1,046 63		
29. (*e*) Law costs	838 85		
30 (*f*) Fuel, rent, taxes (other than in 32) and rates	712 28		
31. (*g*) Travelling expenses	1,918 30		
32. (*h*) Insurances or taxes advanced on property mortgaged to the Corporation	5,761 39		25,986 14
E.—*Other Expenditures, viz.:*			
33. (*a*) Written off	1,658 96		
34. (*b*) Furniture	174 00		
35. (*c*) Improvements on properties	551 50		2,384 46
F.—*Balance.*			
37. (*a*) Cash on hand	17 96		
(*b*) Cash in bank	173 78		191 74
Totals	307,185 64	75,370 53	382,556 17

MISCELLANEOUS STATEMENT FOR THE EIGHT MONTHS ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898...	9,450 00
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898?	24,185 31
6. Average rate of interest per annum received by the Corporation during 1897. On Mortgages of Realty 9½%; on other securities, 9 %.	
7. Of the mortgages held by the Corporation $314,187.38 is on realty situate in Ontario, and $881,923.44 is on realty situate elsewhere.....	1,196,110 82
8. Loans written off or transferred to real estate account during 1897	13,217 46
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897. No. 13: amount.....	7,205 10
10. Aggregate market value of the land mortgaged to the Corporation, $1,794,166.23....	1,794,166 23
11. How often are the securities held by the Corporation valued? Yearly or oftener.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Manager $5,000; cashier, $500; and accountant $500.	
13. When were the accounts of the Corporation last audited? 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed); Wm. Powis, F.C.A., Toronto; H. Vigeon, F.C.A., Toronto.	

THE EQUITABLE SAVINGS, LOAN AND BUILDING ASSOCIATION.

Head Office, 24 Toronto Street, Toronto.

Incorporated under the Building Societies Act (R. S. O. 1887, c. 169) by declaration filed with the Clerk of the Peace for the County of York, on the 29th February, 1892. (Decl. Book II., 87).

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of The Equitable Savings, Loan and Building Association of Toronto, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 24 Toronto street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of three directors and three trustees holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
H. O'Hara	President	Toronto	11th January, 1892	15th February, 1898.
John McGillivray	Trustee	"	15th December, 1893.	"
G. M. Rose	"	"	"	"
T. W. Dyas	"	"	"	"
Edward A. Taylor	Manager	"	8th April, 1893	"
Thos. J. Wardell	Secretary	"	18th January, 1894	"

A. Permanent capital stock: total amount authorized, $500,000; total amount subscribed, $101,000, as more particularly set out in Schedule A hereto.

Schedule A.

(a).—*Fixed and permanent capital stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.			
		$	$ c.	$ c.	$ c.
1. Fully called	889	100	88,900 00	88,900 00	.....
2. Optional payments entitled share in dividends if any	121	.....	12,100 00	5,391 75	6,708 25
Totals	1,010	.....	101,000 00	94,291 75	6,708 25

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed)

B. Terminating or withdrawable stock: total amount subscribed, $1,531,200 made up as follows:

1,652 shares "prepaid" stock (other than above) at $100 per share, $165,200, on which there has been paid in $84,971.07; 13,660 shares instalment stock (payable by fixed periodical payments) at $100 per share, $1,366,000, on which there has been paid in $145,476.53; total number of shares 16,318, subscribed by 2,207 shareholders, who have paid thereon the total of $230,447.60.

SCHEDULE B.

Shares of terminating or withdrawable stock.			Fully paid.		Prepaid.		Instalment.		Total.
			No.	Amount.	No.	Amount.	No.	Amount.	
				$ c.		$ c.			$ c.
Number and amount in force at 31st December, 1896		12,351			1,565		10,790		
Number and amount issued during 1897		5,567			147		5,420		
Gross total in force at any time in 1897		17,918			1,708		16,210		
Deduct as follows:	No. of shares	Amount.							
Withdrawn and paid off during 1897	1,364	14,662 14					1,364		
Converted into permanent stock during 1897	101				56		45		
Forfeited and lapsed during 1897	1,141	1,621 86					1,141		
Total deduction.	2,606				56		2,550		
Net total remaining in force at 31st December, 1897					1,652	84,971 07	13,660	145,476 53	230,447 60
Total amount distributed or credited in 1897:									
(1) As interest				1,515 44		4,061 61			5,577 05
Rate of such interest, per cent. per annum 6%.									
(2) As dividends out of profits				3,013 03		3,250 89		12,365 91	18,629 83
Rate or rates per cent. of such dividends 9% and 7½%, prepaid.									
Totals				4,528 47		7,312 50		12,365 91	24,206 88

Balance Sheet as at 31st December, 1897.

Capital and Liabilities.

Dr.

Item No.		$ c.	$ c.
	Capital (Liabilities to Stockholders or Shareholders).		
	A.—*Permanent Capital Stock or Shares.*		
1.	(*a*) Ordinary capital fully called : total called $; total paid thereon	.....	94,291 75
4.	(*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid $3,873 15		
	Less expenses 3,903 50		
	Deficit $30 35		
	Calls on permanent stock	.....	6,708 25
	B.—*Terminating Capital Stock or Shares.*		
17.	(*d*) Prepaid stock : total in force shares at $ per share, on which has been paid to December, 1896, with interest ..	73,912 53	
	Prepaid stock : total in force shares at $ per share, on which has been paid to December, 1897	9,188 80	
18.	(*e*) Profits or accrued interest on (17) credited or appropriated but not yet paid	2,010 34	
		85,111 67	
	Less expenses	140 60	
			84,971 07
20.	(*g*) Instalment stock	133,110 62	
21.	(*h*) Profits or accrued interest on (20) credited or appropriated but not paid out	12,365 91	
			145,476 53
	C.—*Liabilities to Stockholders or Shareholders other than as already shown under* A *or* B, *viz.*:		
24.	Balance profit and loss account	383 90	
25.	Less deficit from item 7	30 35	
			353 55
	Liabilities to the Public.—None.		
	Total actual liabilities	.....	331,801 15

Balance Sheet as at 31st December, 1897.

Cr.

		$ c.	$ c.
	I.—Assets of which the Corporation is the Beneficial Owner.		
	B.—*Debts secured by Mortgages of Land.*		
9.	(*a*) Debts (other than item 10) secured by mortgages of land.	.....	241,610 88
	C.—*Debts not above enumerated for which the Corporation holds securities as follows :*		
20.	(*h*) Debts secured only by Terminating Stock or Shares of the Corporation	.....	8,144 98
	E.—*Cash.*		
32.	(*b*) In bank and Trusts Co	.....	73,046 14
	F.—*Assets not hereinbefore mentioned.*		
37.	(*a*) Insurance arrears	236 32	
38.	(*b*) Office furniture	393 24	
39.	(*c*) Calls on permanent stock	6,708 25	
40.	(*d*) License account	1,661 34	
			8,999 15
	Total of assets owned beneficially by Corporation	.....	331,801 15

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account.		Total. (Column 4.)
		Terminating capital. (Column 2.)	Permanent capital, including reserve. (Column 3.)	
I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.	$ c.
A.—*Balances from 31st December, 1896.*				
Item No. 1. (*a*) Capital account				20,083 25
B.—*Sums received wholly or partly on Capital Stock.*				
6. (*c*) Sales of fully paid building society stock.			71,843 75	71,843 75
7. (*d*) Sales of prepaid building society stock...		9,188 85		
8. (*e*) Dues on instalment building society stock		65,404 35		74,593 15
C.—*Receipts on account of Investments, Loans or Debts.*				
(*a*) On Mortgages of Realty:				
10. (i) Principal			16,550 10	16,550 10
11. (ii) Interest	12,165 45			12,165 45
E.—*Miscellaneous.*				
19. (*b*) Premium or bonus or loans	9,742 74			
20. (*c*) Membership or entry fees (being income of corporation)	1,567 23			
21. (*d*) Fines	591 20			
22. (*e*) Forfeitures or lapses. (*Extend into Column 1*)	1,621 86			13,523 03
Expenses, instalment, prepaid, permanent stock, etc	17,782 08			17,782 08
G.—*Receipts from other sources, viz.* :—				
30. (*a*) Interest	169 49			
(*b*) Arrears, insurance paid	266 42			
(*c*) " interest, premiums	1,589 55			2,025 46
Totals	45,496 02	74,593 15	88,393 85	228,566 27

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Amount carried to capital account. Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c.	$ c.	$ c.
A.—*Sums Loaned or Invested on Capital Account.*				
Item No.				
1. (*a*) Loaned on Mortgages of Realty, together with interest in arrears			111,500 31	111,500 31
B.—*Expended on Stock Account.*				
8. Dividends paid on permanent stock	1,515 44			
9. Dividends paid on terminating stock	4,061 61			5,577 05
11. Paid for terminating stock withdrawn		14,662 14		14,662 14
D.—*Management Expenses (other than foregoing).*				
25. (*a*) Salaries and fees	8,860 21			
26. (*b*) Commission or brokerage	2,385 04			
27. (*c*) Advances to agents	278 94			
28. (*d*) Stationery, postage, printing and advertising	2,249 60			
29. (*e*) Law costs	97 73			
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	380 00			
31. (*g*) Travelling expenses	3,310 18			
32. (*h*) Insurance advanced	236 32			17,798 02
E.—*Other Expenditures, viz.:*				
33. (*a*) Office furniture, $72.20; discount on advance payments, $55.58	127 88			
34. (*b*) Licenses, $702.22; Trusts Co's. fee, $240.	942 22			1,070 10
35. (*c*) Expense permanent and prepaid				3,132 10
F.—*Balance.*				
37. (*a*) Cash on hand	1,780 41			
(*b*) Cash in banks and Trusts Corp	73,046 14			74,826 55
Totals				228,566 27

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898. None issued.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None issued.	
3. Amount of other existing obligations of the Corporation which will mature in 1898? None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898. None.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, no deposits; on debentures, no debentures; on debenture stock, no debenture stock.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 10 4-5%.	
7. Of the mortgages held by the Corporation $95,573.76 is on realty situate in Ontario, and $146,037.12 is on realty situate elsewhere.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No., 8; amount, $7,850.	
10. Aggregate market value of the land mortgaged to the Corporation	519,246 00
11. How often are the securities held by the Corporation valued? At passing of loan and from time to time on inspection.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager and secretary.	
13. When were the accounts of the Corporation last audited? 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed)? H. R. O'Hara, Toronto; George Clay, Toronto.	

THE GLOBE SAVINGS AND LOAN COMPANY.

Head Office, Toronto, Ont.

Incorporated under the Building Societies' Act (R. S. O. 1887, c. 169), by declaration filed with the Clerk of the Peace for the County of York, on 9th February 1892. (Decl. Book II., 89.)

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Globe Savings and Loan Company, of Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 73 Victoria Street, in the City of Toronto, in the Province of Ontario

The Board is constituted of eight directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
John Flett	President	Toronto, Ont.	10th February, 1892.	31st December, 1897.
E. F. B. Johnston, Q.C.	Vice-President	"	"	"
Henry Lowndes	Director	"	"	"
Col. A. H. Macdonald	Director	Guelph, Ont.	"	"
L. P. D. Tilley	Director	St. John, N.B.	25th May, 1897	"
J. A. Girvin	Director	Winnipeg, Man	"	"
J. H. Housser	Director	Toronto	"	"
E. W. Day	Manager / Secretary	"	29th January, 1897.	"

A. Permanent capital stock: total amount authorized, $1,000,000; total amount subscribed, $357,690, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	—		
		$	$ c.	$ c.	$ c.
1. Fully paid	3,519	65 and 100	349,590 00	338,024 22	11,565 78
3. Instalment (payable by fixed periodical payments, and still in process of payment)	81	100	8,100 00	6,193 65	1,906 35
Totals	3,600	.....	357,690 00	344,217 87	13,472 13

LIST OF SHAREHOLDERS AS AT 31st DECEMBER, 1897.

(Not printed.)

B. Terminating or withdrawable stock: Total amount subscribed, $1,720,350, made up as follows:—

401 shares fully paid stock at $100 per share $40,100, on which there has been paid in $38,069.00; 828½ shares "prepaid" stock (other than above) at $100 per share $82,850, on which there has been paid in $42,062 94; 15,974 shares instalment stock (payable by fixed periodical payments) at $100 per share $1,597,400, on which there has been paid in $162,346.81. Total number of shares 17,203½, subscribed by 2,509 shareholders who have paid thereon the total of $242,478.75.

SCHEDULE B.

	Fully paid.		Prepaid.		Instalment.		Total.
	No.	Amount.	No.	Amount.	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$		$		$	$
Number and amount in force at 31st Dec., 1896	780	78,000	700½	70,050	15,248	1,524,800	1,672,850
Number and amount issued during 1897	22	2,200	248	24,800	3,612	361,200	388,200
Gross total in force at any time in 1897	802	80,200	948½	94,850	18,860	1,886,000	2,061,050
Deduct as follows: (No. of shares / Amount)							
Withdrawn and paid off during 1897 — 2,987 / $298,700	117	11,700	120	12,000	2,750	275,000	.....
Converted into permanent stock during 1897 — 284 / $28,400	284	28,400	....	.....	.....	.....	.....
Forfeited and lapsed during 1897 — 136 / $13,600	....	.....	....	.....	136	13,600	.....
Total deductions — 3,407 / $340,700	401	40,100	120	12,000	2,886	288,600	340,700
Net total remaining in force at 31st Dec., 1897	401	40,100	828½	82,850	15,974	1,597,400	1,720,350
Total amount distributed or credited in 1897:		$ c.		$ c.		$ c.	
(1) As interest	....	.....	....	6,074 69	.....	41,595 70	.....
Rate of such interest, per cent. per annum,							
(2) As dividends out of profits	....	3,499 78	....	.....	.....	.....	.....
Rate or rates per cent. of such dividends, 6 per cent.							

Balance Sheet as at 31st December, 1897.

Capital and Liabilities

Dr.

		$ c.	$ c.
	Capital (Liabilities to Stockholders or Shareholders).		
Item No.	A.—*Permanent Capital Stock or Shares.*		
1.	(*a*) Ordinary capital fully called: total called, $349,590.00; total total paid thereon	338,024 22	
4.	(*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	1,669 21	
6.	(*f*) Reserve Fund in respect of (1), (2) or (3)	15,892 95	
8.	(*h*) Instalment permanent stock (payable by fixed periodical payments): Total subscribed $8,100, on which has been paid	4,392 59	
9.	(*i*) Dividends declared on (8) but not yet paid	1,801 06	
			361,780 03
	B.—*Terminating Capital Stock or Shares.*		
14.	(*a*) Fully paid stock: Total in force 401 shares at $100 per share	38,069 00	
16.	(*c*) Profits or accrued interest on (14) not credited or appropriated	710 60	
17.	(*d*) Prepaid stock: Total in force 828½ shares at $50 per share, on which has been paid	42,062 94	
18.	(*e*) Profits or accrued interest on (17) credited or appropriated but not yet paid	6,074 69	
20.	(*g*) Instalment stock: Total issue now in force 15,974 shares, per share of $100, on which has been paid	162,346 81	
21.	(*h*) Profits or accrued interest on (20) credited or appropriated but not paid out	41,595 70	
	C.—*Liabilities to Stockholders or Shareholders other than as already shown under A or B, viz.:—*		
24.	Contingent account	3,970 76	
			294,830 50
			656,610 53
	Liabilities to the Public.		
27.	Deposits	15,468 51	
29.	Debentures issued in Canada	54,750 00	
30.	Interest due and accrued on (29)	720 16	
39.	Due on loans in process of completion or to pay assumed mortgages	34,453 27	
40.	Other liabilities to the public, viz.:—		
41.	Public accounts	23 87	
			105,415 81
	Total actual liabilities		762,026 34

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	687,104 96	
10. (*b*) Debts secured by mortgaged land held for sale	24,745 97	711,850
C.—*Debts not above enumerated for which the Corporation holds Securities as follows:*		
20. (*h*) Debts secured only by Permanent Stock or Shares of the Corporation	1,200 00	
21. (*i*) Debts secured only by terminating stock or shares of the Corporation.	8,780 47	
22. (*j*) Debts secured by life insurance policies	2,600 86	
23. (*k*) Debts secured by debentures of other Corporations	397 22	
24. (*l*) Agents' balances	179 93	13,158 48
E.—*Cash.*		
31. (*a*) On hand	271 63	
32. (*b*) In banks $37,672.17		
Less owing to banks 2,482.95	35,189 22	35,460 85
F.—*Assets not Hereinbefore Mentioned.*		
37. (*a*) Office fittings	1,291 68	
38. (*b*) Personal accounts	264 40	1,556 08
Total of assets owned beneficially by Corporation		762,026 34

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carrried to capital account. Terminating capital. (Column 2.)	Amount carrried to capital account. Permanent capital including reserve. (Column 3,)	Total. (Column 4).
I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.	$ c.
Item No. A.—*Balances from 31st December, 1896.*				
1. (*a*) Capital account loss and gain distributed during 1897	87,298 85	.....	.....	87,298 85
(*b*) Cash (not already shown under (1)) :—				
2. (i) On hand	.....	.....	.....	941 23
3. (ii) In bank	.....	.....	.....	35,875 97
B.—*Sums Received Wholly or Partly on Capital Stock.*				
6. (*c*) Sales of fully paid building society stock	.....	3,001 00	46,172 14	49,173 14
7. (*d*) Sales of prepaid building society stock	.....	3,731 44	.....	3,731 44
8. (*e*) Dues on instalment building society stock	.....	100,798 93	.....	100,798 93
9. (*f*) Premiums on (6), (7) and (8)	2,440 00	.....	.....	2,440 00
C.—*Receipts on Account of Investments, Loans or Debts.*				
(*a*) On Mortgages of Realty :—				
10. (i) Principal	.....	.....	.....	92,226 74
11. (ii) Interest	59,031 75	.....	.....	59,031 75
(*b*) On other securities :—				
12. (i) Principal	.....	.....	.....	5,663 15
D.—*Receipts from Real Estate owned Beneficially by Corporation.*				
17. (*b*) Rents	1,423 90	.....	.....	1,423 90
E.—*Miscellaneous.*				
20. (*c*) Membership or entry fees (being income of Corporation)	20,190 39	.....	.....	20,190 39
21. (*d*) Fines	709 55	.....	.....	709 55
22. (*e*) Forfeitures or lapses. (*Extend into column 1*)	426 56	.....	.....	426 56
24. (*g*) Conversions of terminating stock into permanent stock. (*Extend into column 3*)	.....	.....	26,980 00	26,980 00
F.—*Borrowed money.*				
25. (*a*) Bank or other advances, discounts or overdrafts	.....	.....	.....	2,482 95
26. (*b*) Borrowed by taking deposits	.....	.....	.....	33,205 70
27. (*c*) Borrowed on debentures	.....	.....	.....	5,100 00
G.—*Receipts from other Sources, viz.* :				
30. (*a*) Agents' balances	.....	.....	.....	134 50
(*b*) Personal account	.....	.....	.....	2,106 41
(*c*) Life insurance premiums	.....	.....	.....	12 91
Totals	.....	.....	.....	529,954 07

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c.	$ c.
Item No. A.—*Sums Loaned or Invested on Capital Account.*			
1. (a) Loaned on Mortgages of Realty			214,955 00
(b) Loaned or invested in other securities, viz.:			
2. (i) Company's shares			4,573 54
3. (ii) Life insurance policies			709 38
6. (c) Real estate purchased, transferred from mortgage account			22,205 12
B.—*Expended on Stock Account.*			
8. Dividends paid on permanent stock. In cash $17,027 75; Credited 20,834 69; Rest account 15,892 95	53,755 39		53,755 39
9. Dividends paid on terminating stock. (*Extend into Column 1*).	3,499 78		3,499 78
10. Interest on terminating stock. Credited	49,695 04		49,695 04
11. Paid for terminating stock withdrawn		34,099 99	34,099 99
13. Profits paid on (11) and (12)	2,225 41		2,225 41
14. Paid for terminating stock retired		14,421 00	14,421 00
15. Terminating stock forfeited or lapsed		426 56	426 56
16. Terminating stock converted into permanent		26,980 00	26,980 00
C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.*			
19. (b) Deposits: Principal, $26,893.41; interest, $445.56			27,338 97
20. (c) Debentures issued in Canada: Principal, $.....; interest, $1,972 60			1,972 60
D.—*Management Expenses (other than foregoing).*			
25. (a) Salaries and fees	6,443 59		6,443 59
26. (b) Commission or brokerage	6,927 13		6,927 13
28. (d) Stationery, postage, printing and advertising	2,299 35		2,299 35
29. (e) Law costs	266 27		266 27
30. (f) Fuel, rent, taxes (other than in 32) and rates	1,447 09		1,447 09
31. (g) Travelling and general expenses	1,626 90		1,626 90
Insurance or taxes advanced on property mortgaged to the corporation	5,309 86		5,309 86
E.—*Other Expenditures, viz.*			
33. (a) Exchange and discount	732 28		732 28
34. (b) Trustees' and agents' salaries	2,085 00		2,085 00
35. (c) Office fittings	136 35		136 35
36. (d) Advances to close loans			7,002 50
(e) Carried to contingent account	876 17		876 17
F.—*Balance.*			
37. (a) Cash on hand	271 63		
(b) Cash in various banks	37,672 17		37,943 80
Totals			529,954 07

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898.	
5. Average rate of interest per annum paid by the Corporation during 1897, on deposits, 4 per cent.; on debentures, 4.75 per cent.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 8.82 per cent.; on other securities, 8 per cent	
7. Of the mortgages held by the Corporation, $203,008.77 is on realty situate in Ontario, and $465,043 62 is on realty situate elsewhere.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897—number, 17 ; amount $22,245.12.	
10. Aggregate market value of the properties mortgaged to the Corporation, $1,634,389.86.	
11. How often are the securities held by the Corporation valued? Annually.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Managing director, $3,000.	
13. When were the accounts of the Corporation last audited? 31st December, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 : F. Roper, Toronto, Ont ; F. S. Sharpe, F.C A., St. John, N.B.	

THE HOME BUILDING AND SAVINGS ASSOCIATION [OF OTTAWA].

Head Office, Ottawa, Ontario.

Incorporated under the Building Societies' Act (R. S. O. 1887, c. 169) by declaration filed with the Clerk of the Peace for the County of Carleton, on the 24th June, 1890. (Decl. Book II., 119.) The Company, for purposes of distinction, ordinarily uses the words "of Ottawa" as part of its corporate name; but those words do not appear in the declaration of incorporation.

The lending and the borrowing powers are governed by the Loan Corporations Act R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Home Building and Savings Association of Ottawa, Ontario, at the 31st December, 1897, and for the sixteen months ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 52 Sparks street, in the City of Ottawa, in the Province of Ontario.

The Board is constituted of seven directors holding office for two years.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Current term of office.	
			Began (date).	Will end (date).
John R. Armstrong.....	President	Ottawa.....	July, 1897	January, 1899....
A. P. Bradley.....	Vice-President.	"	" 1897	" 1899....
M. Kavanagh.....	Director	"	" 1897	" 1899....
Geo. P. Brophy	Director	"	September, 1896...	" 1898....
Geo. Hutchinson	Director	"	" 1896...	" 1898....
Wm. Scott	Director	"	" 1896...	" 1898....
E. B. Butterworth.....	Director	"	" 1896...	" 1898....
C. A. Douglas.....	Sec.-Treas	"	24th June, 1890....	

A. Permanent capital stock: total amount authorized, ; total amount subscribed, , as more particularly set out in Schedule A hereto.

B. Terminating or withdrawable stock: total amount subscribed, $346,000, made up as follows:

1,730 shares instalment stock (payable by fixed periodical payments) at $200 per share, $346,000, on which there has been paid in $90,727.00. Total number of shares, 1,730, subscribed by 253 shareholders, who have paid thereon the total $90,727.00.

SCHEDULE B.

	Prepaid.	Instalment.		Total.
	Amount paid in advance.	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.	$		$	$
Number and amount in force at 31st December, 1896	603	1,813	69,713 00	70,316 00
" issued during 1897		158	29,114 00	29,114 00
Gross total in force at any time in 1897	603	1,971	98,827 00	99,430 00
Deduct as follows:	No. of shares. / Amount.			
Withdrawn and paid off during 16 months, to 31st December, 1897	223 / $ 6,917			
Forfeited and lapsed during 16 months, to 31st December	18 / 388			
Withdrawn from advance payments		201		
Total deduction	241 / 7,305		241	7,305 00	7,506 00
Net total remaining in force at 31st December, 1897	402	1,731	91,522 00	91,924 00
Total amount distributed or credited in 1897:—				
(1) As interest				7,527 30
Rate of such interest, per cent. per annum				7⅛%

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. B.—*Terminating Capital Stock or Shares.*		
20. (*g*) Instalment stock: total issue now in force, 1,730 shares at $200 per share, $346,000, on which has been paid	90,325 00	
21. (*h*) Profits or accrued interest on (20) credited or appropriated but not paid out	19,245 41	
22. (*i*) Profits or accrued interest on (20) not credited or appropriated	319 45	
23. (*j*) Instalments or premiums paid on (20) in advance	402 00	
		110,291 86
C.—*Liabilities to Stockholders or Shareholders other than as already shown under* A *or* B, *viz.:*		
24. Instalment stock dues unpaid		1,197 00
		111,488 86
LIABILITIES TO THE PUBLIC.		
40. Other liabilities to the public, viz.:—		
41. (a) Taxes and water rates on real estate		161 04
Total actual liabilities		111,649 90

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	86,671 13	
10. (*b*) Debts secured by mortgaged land held for sale	3,614 74	
12. (*d*) Of the debts mentioned in items 9, 10 and 11 the sum of $6,000 is due by directors or officers of the Corporation. (Not extended) $6,000.		90,285 87
C.—*Debts not above enumerated for which the Corporation holds securities as follows:*		
21. (*i*) Debts secured only by terminating stock or shares of the Corporation	10,890 00	
22. (*j*) Debts secured by terminating stock or being arrears of instalments	2,707 60	13,597 60
E.—*Cash.*		
32. (*b*) In bank.....	.....	7,766 43
Total of assets owned beneficially by Corporation.....	.....	111,649 90

Cash Account.

Receipts for the sixteen months ending 31st December, 1897.

	Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4.)
I.—Received by the Corporation for its own use.		
A.—*Balance from 31st December, 1896.*	$ c.	$
Item No. (*b*) Cash (not already shown under (1)):—		
3. (ii) In bank	311 29	311 29
B.—*Sums received wholly or partly on Capital Stock.*		
8. (*e*) Dues on instalment building society stock	28,173 00	28,173
C.—*Receipts on Account of Investments, Loans or Debts.*		
(*a*) On Mortgages of Realty:—		
10. (i) Principal	14,583 16	
(*b*) On other securities:—		
12. (i) Principal	2,785 00	
13. (ii) Interest or dividends	389 80	17,757 96
D.—*Receipts from Real Estate Owned Beneficially by Corporation.*		
17. (*b*) Rents	118 50	118 50
E.—*Miscellaneous.*		
19. (*b*) Premium or bonus on loans	8,076 98	
20. (*c*) Membership or entry fees (being income of Corporation)	46 75	
21. (*d*) Fines	278 53	
22. (*e*) Forfeitures or lapses. (*Extend into column 1*)	40 50	
G.—*Receipts from Other Sources, viz.*:—		
30. (*a*) Transfers	20 75	8,463 51
Totals		54,824 26

Cash Account.

Expenditure for the 16 months ending 31st December, 1897.

Item No.		Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4.)
	1.—Expended on Corporation Account.		
	A.—*Sums Loaned or Invested on Capital Account.*	$ c.	$ c.
1.	(*a*) Loaned on Mortgages of Realty (including 7 (*e*) if no separate account therefor)	29,308 78	
	(*b*) Loaned or invested in other Securities, viz.:—		
2.	(i) On stocks	10,660 00	39,968 78
	B.—*Expended on Stock Account.*		
11.	Paid for terminating stock withdrawn. (*Extend into Column 1 or 2; or divide between 1 and 2, as the case may be*)	4,780 00	
13.	Profits paid on (11) and (12). (*Extend as in 11*)	354 36	5,134 36
	D.—*Management Expenses (other than foregoing):*		
25.	(*a*) Salaries and fees	1,448 16	
28.	(*d*) Stationery, postage, printing and advertising	27 40	
29.	(*e*) Law costs	45 24	
31.	(*g*) Travelling expenses	153 96	1,674 76
	E.—*Other Expenditures, viz.:*		
33.	(*a*) Repairs on real estate	273 38	
34.	(*b*) Interest on overdraft in bank	6 55	279 93
	F.—*Balance.*		
	(*b*) Cash in various banks		7,766 43
	Totals		54,824 26

MISCELLANEOUS STATEMENT FOR THE SIXTEEN MONTHS ENDING 31ST DECEMBER, 1897.

	$ c.
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 7¼%; on other securities, 6½%.	
7. Of the mortgages held by the Corporation, $86,671.13 is on realty situate in Ontario.	
10. Aggregate market value of the land mortgaged to the Corporation, $121,050.00.	
11. How often are the securities held by the Corporation valued? At time loan is effected.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Secretary-treasurer, $2,000.	
13. When were the accounts of the Corporation last audited? 4th January, 1898.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed): N. McIntosh and A. Bayly, Ottawa.	

THE LONDON LOAN COMPANY OF CANADA.

Head Office, London, Ontario.

Incorporated under The Building Societies' Act (Consol. Stat. U. C. chap. 53) by declaration filed with the Clerk of the Peace for the County of Middlesex, 2nd May, 1877.

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the London Loan Company of Canada, of London, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 433 Richmond street, in the City of London, in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Thomas Kent	President	London	11th Feb'ry, 1897	10th Feb'ry, 1898
James Owrey	Vice-President	"	"	"
J. A. Nelles	Director	"	"	"
G. G. McCormick	Director	"	"	"
Andrew Weldon	Director	"	"	"
G. D. Sutherland	Director	"	"	"
R. W. Puddicombe	Director	"	"	"
M. J. Kent	Manager-Secretary.	"	June, 1877.	

A. Permanent capital stock : Total amount authorized, not limited ; total amount subscribed, $661,850, as more particularly set out in Schedule A hereto.

Schedule A.

(*a*).—*Fixed and permanent capital stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.			
		$	$ c.	$ c.	$ c.
1. Fully paid	13,237	50	661,850 00	661,850 00	
Totals	13,237	50	661,850 00	661,850 00	

List of Shareholders as at 31st December, 1897.

(Not printed.)

B. Terminating or withdrawable stock : Total amount subscribed, $17,850, made up as follows :

357 shares instalment stock (payable by fixed periodical payment) at $50 per share, $17,850, on which there has been paid in, $2,277.75. Total number of shares subscribed by shareholders, who have paid thereon the total of $2,277.75.

SCHEDULE B.

	Instalment.		Total.
	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$ c	$ c.
Number and amount in force at 31st December, 1896	390	19,500 00	19,500 00
" issued during 1897			
Gross total in force at any time in 1897	390	19,500 00	19,500 00
Deduct as follows :	No. of shares / Amount		
Converted into permanent stock during 1897	33 / $ c. 1,650 00		
Total deductions		33	1,650 00	1,650 00
Net total remaining in force at 31st December, 1897	357	17,850 00	17,850 00
Total amount distributed or credited in 1897 :			
(2) As dividends out of profits		129 41	129 41
Rate or rates per cent. of such dividends, 6%.			

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary capital fully paid : Total called, ; total paid thereon	661,850 00	
5. (*e*) Unappropriated profits in respect of (1), (2) or (3)	506 38	
6. (*f*) Reserve Fund in respect of (1), (2) or (3)	81,000 00	
		743,356 38
B.—*Terminating Capital Stock or Shares.*		
20. (*g*) Instalment stock : Total issue now in force, 357 shares at per share of $50, on which has been paid	2,277 75	
21. (*h*) Profits or accrued interest on (20) credited or appropriated but not paid out (included in (20)).		2,277 75
		735,634 13
LIABILITIES TO THE PUBLIC.		
27. Deposits	453,132 37	
28. Interest on deposits, due, or accrued or capitalized in 1897 (included in (27), $16,537.50.		
29. Debentures issued in Canada	143,041 12	
30. Interest due and accrued on (29)	2,469 73	
31. Debentures issued elswhere than in Canada	87,356 38	
32. Interest due and accrued on (31)	641 01	
37. Owing to Banks (including interest due or accrued)	17,979 02	
		704,619 63
Total actual liabilities		1,450,253 76

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	1,332,071 00	1,332,071 00
C.—*Debts not above Enumerated for which the Corporation Holds Securities as follows.*		
14. (*b*) Debts secured by municipal bonds or debentures	982 00	
16. (*d*) Debts secured by Loan Corporations' debentures	30,388 00	
20. (*h*) Debts secured only by permanent stock or shares of the Corporation	56,804 00	88,174 00
E.—*Cash.*		
31. (*a*) On hand	1,649 57	
32. (*b*) In bank	28,109 19	29,758 76
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture	250 00	250 00
Total of assets owned beneficially by Corporation		1,450,253 76

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to capital account.		Total.
	Terminating capital. (Column 2.)	Permanent capital, including reserve. (Column 3.)	(Column 4.)
I. Received by the Corporation for its own use.	$ c.	$ c.	$ c.
A.—*Balances from 31st December, 1896.*			
Item No. (b) Cash (not already shown under (1))			
2. (i) On hand			3,038 92
3. (ii) In bank			21,307 67
B.—*Sums received wholly or partly on Capital Stock.*			
8. (e) Dues on instalment building society stock	1,092 30		1,092 30
C.—*Receipts on account of investments, loans or debts.*			
(a) On Mortgages of Realty :			
10. (i) Principal			189,476 89
11. (ii) Interest			71,960 18
(b) On other securities :			
12. (i) Principal			32,294 85
13. (ii) Interest or dividends			3,169 93
E. *Miscellaneous.*			
24. (g) Conversions of terminating stock into permanent stock. (*Extend into column 3*)		1,650 00	1,650 00
F.—*Borrowed Money.*			
26. (b) Borrowed by taking deposits			1,054,773 76
27. (c) Borrowed on Debentures			42,579 97
Totals	1,092 30	1,650 00	1,421,334 47

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4.)
	$ c.	$ c.	$ c.
I.—Expended on Corporation Account.			
A.—Sums Loaned or Invested on Capital Account.			
Item No.			
1. (*a*) Loaned on Mortgages of Realty			178,513 40
(*b*) Loaned or invested in other securities, viz. :—			
2. (i) Loan Company's debentures			30,000 00
3. (ii) Permanent stock			21,320 00
B.—Expended on Stock Account.			
8. Dividends paid on permanent stock. (*Extend into column 1*)	39,711 00		39,711 00
9. Dividends paid on terminating stock. (*Extend into column 1*)	129 41		129 41
12. Paid for terminating stock matured. (*Extend as in 11*)	4 04		4 04
16. Terminating stock converted into permanent. (*Extend into column 2*)		1,650 00	1,650 00
C.—Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.			
19. (*b*) Deposits : Principal, $1,052,155.30 ; interest, $16,537.50			1,068,692 80
20. (*c*) Debentures issued in Canada : Principal, $31,249.55 ; interest, $6,730.76			37,980 31
21. (*d*) Debentures issued elsewhere : Principal $18,493.33 ; interest, $3,490.10			21,983 43
D.—Management Expenses (other than foregoing) :			
25. (*a*) Salaries and fees			5,706 64
26. (*b*) Commission or brokerage			1,175 85
28. (*d*) Stationery, postage, printing and advertising			175 94
30. (*f*) Fuel, rent, taxes (other than in 32) and rates, etc			2,164 46
31. (*g*) Travelling expenses			66 40
32. (*h*) Insurances or taxes advanced on property mortgaged to the Corporation, included in No. 1.			
E.—Other Expenditures, viz. :			
33 (*a*) Sundries			143 54
34. (*b*) Interest			137 51
F.—Balance.			
37. (*a*) Cash on hand $1,649 57			
(*b*) Cash in various banks. 28,109 19			
29,758 76			
Less owing banks 17,979 02			11,779 74
Totals	39,844 45	1,650 00	1,421,334 47

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	41,150 00
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898.	5,840 00
3. Amount of other existing obligations of the Corporation which will mature in 1898, exclusive of deposits, none.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898, including demand loans.....	633,523 00
5. Average rate of interest per annum paid by the Corporation during 1897, on deposits, 3.761%; on debentures, 4.251%; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6%; on other securities, 5%.	
7. Of the mortgages held by the Corporation $1,332,071.00 is on realty situate in Ontario, and $5,075.00 is on realty situate elsewhere.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897. No, 6; amount	13,966 61
10. Aggregate market value of the land mortgaged to the Corporation, $2,490,529.00.	
11. How often are the securities held by the Corporation valued? When necessary for safety.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager, $15,000; cashier $10,000; mortgage clerk, $1,000; accountant, $10,000; ledger keeper, $2,000.	
13. When were the accounts of the Corporation last audited? 6th January, 1898, to 31st December, 1897,	
14 Names and addresses of the auditors respectively for 1897 and 1898 (if appointed), W. J. Carson, London, Ont.; C. A. Kingston, London, Ont.	

THE MIDLAND AND WESTERN COUNTIES LOAN AND SAVINGS COMPANY.

Head Office, Peterborough, Ont.

Incorporated under the Building Societies' Act, R. S. O., 1887, c. 169, by declaration filed with the Clerk of the Peace for the County of Peterborough, on the 26th May, 1893. The original corporate name was "The Midland and Western Counties Loan and Savings Society," which was by Order-in-Council of Ontario, 6th October, 1897, changed to The Midland and Western Counties Loan and Savings Company.

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Midland and Western Counties Loan and Savings Company of Peterborough, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 127 Hunter street, in the Town of Peterborough, in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
J. R. Stratton	President	Peterborough	10th March, 1897	March, 1898.
R. R. Hall	Vice-President	"	"	"
T. P. Coffee	Director	Toronto	"	"
F. M. Holland	Director	"	"	"
W. A. Stratton	Director	Peterborough	"	"
A. H. Stratton	Director	"	"	"
F. J. Jamieson	Secretary			

A. Permanent capital stock: total amount authorized, none; total amount subscribed, none.

B Terminating or withdrawable stock: Total amount subscribed, $7,000 made up as follows:—

5 shares fully paid stock at $100 per share $500, on which has been paid in $500; 65 shares instalment stock (payable at fixed periodical payments at $100 per share $6,500, on which there has been paid in $217.00; shareholders, who have paid thereon the total of $717 00.

SCHEDULE B.

	Fully paid.		Instalment.		Total.
	No.	Amount.	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$		$	$
Number and amount in force 31st December, 1896.....	None.	.....	....	.....	.....
" issued during 1897.....	5	500	65	6,500	7,000
Gross total in force at any time in 1897	5	500	65	6,500	7,000
Deductions.—*None.*					
Net total remaining in force at 31st December, 1897	5	500	65	6,500	7,000

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

Item No.		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	B.—*Terminating Capital Stock or Shares.*		
14.	(*a*) Fully paid stock: Total in force, 5 shares at $100 per share.....	500 00	
16.	(*c*) Profits or accrued interest on (14) not credited or appropriated ..	15 00	
20.	(*g*) Instalment stock: Total issue now in force, 65 shares at $ per share of $100, on which has been paid.	217 00	
21.	(*h*) Profits or accrued interest on (20) credited or appropriated but not paid out.....	72 00	
	Total actual liabilities..... .. .	.....	801 00
	LIABILITIES TO THE PUBLIC.—*None.*		

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	500 00	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	15 00	515 00
D.—*Unsecured Debts.*		
30. (*d*) Interest due or accrued on items 27 to 29 and not included therein		
E.—*Cash.*		
31. (*a*) On hand		289 00
Total of assets owned beneficially by Corporation		804 00

CASH ACCOUNT.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account.	Total. (Column 4.)
		Terminating capital. (Column 2.)	
I.—RECEIVED BY THE CORPORATION FOR ITS OWN USE.			
B.—*Sums Received Wholly or Partly on Capital Stock.*	$ cts.	$ cts.	$ c.
Item No.			
6. (*c*) Sales of fully paid Building Society Stock		500 00	500 00
8. (*c*) Dues on Instalment Building Society Stock		217 00	217 00
9. (*f*) Premiums on (6) and (8)	120 50		120 50
Totals	120 50	717 00	837 50

Cash Account

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4.
I.—Expended on Corporation Account.	$ c.	$ c.	$ c.
A.—*Sums Loaned or Invested on Capital Account.*			
Item No.			
1. (*a*) Loaned on Mortgages of Realty	.....	500 00	500 00
D.—*Management Expenses (other than foregoing.)*			
25. (*a*). Salaries and fees	45 00	.....	45 00
E.—*Other Expenditures, viz.:*			
33. (*a*) Seal	3 50	.....	3 50
F.—*Balance.*			
37. (*a*) Cash on hand	289 00	.....	289 00
Totals	337 50	500 00	837 50

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898, none.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898, none.	
3. Amount of other existing obligations of the Corporation which will mature in 1898, none.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898.....	500 00
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, none; on debentures, none; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6 per cent.; on other securities, none.	
7. Of the mortgages held by the Corporation $500 is on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897, none.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No., none; amount,	
10. Aggregate market value of the land mortgaged to the Corporation, $900.	
11. How often are the securities held by the Corporation valued? Yearly.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? None.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). Not appointed.	

THE MONTREAL LOAN AND INVESTMENT COMPANY OF MONTREAL.

Head Office, Montreal, Province of Quebec.

Chief agent for Ontario (P. of Atty. 25th May, 1897)—Charles King, Ottawa.

Incorporated as a Building Society under Revised Statutes of Quebec, 1888, Chapter 4, Title 11 (Building Societies), Arts. 5401 seq. Declaration of incorporation filed and registered in the office of the Prothonotary of the Superior Court for the District of Montreal on the 7th April, 1894.

The Company applied for registry under the Loan Corporations Act, 60 V. c. 38, s. 111 (3 proviso), and obtained registry under s. 8 (3) as a Local Loan Corporation limited in its operations to the County of Carleton.

The lending and the borrowing powers of the Company in Ontario are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Montreal Loan and Investment Company of Montreal, Que., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 107 St. James street in the City of Montreal, in the Province of Quebec.

The chief agency for Ontario is situated at No. 36 Sparks street, in the City of Ottawa, in the Province of Ontario.

The chief agent and attorney for Ontario is Charles King, and his address is 36 Sparks street, Ottawa, in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date.
L. O. David	President	Montreal, Que.	7 April, 1894	22 February, 1899
Alfred Joyce	Vice-President	"	"	"
G. A. Ducharme	Director	Ste. Cunegonde, Que	"	"
Dr. E. P. Lachappelle	Director	Montreal, Que.	2 March, 1896	"
L. T. Leet	Director	"	7 April, 1894	"
W. H. McCarthy	Manager	"	"	"
A. W. Belfry	Secretary	"	"	"

A. Permanent capital stock: total amount authorized, $100,000; total amount subscribed, $1,500, as more particularly set out in Schedule A hereto.

Schedule A.

(a)—*Fixed and permanent capital stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.
	No. of shares.	Par value of shares.		
		$ c.	$ c.	$ c.
1. Fully paid	15	100 00	1,500 00	1,500 00
Totals	15		1,500 00	1,500 00

List of Shareholders as at 31st December, 1897.
(Not printed.)

B. Terminating or withdrawable stock: Total amount subscribed, $870,400, made up as follows:

914 shares "prepaid" stock (other than above) at $100 per share, $91,400, on which there has been paid in $45,130; 7,790 shares instalment stock (payable by fixed periodical payments) at $100 per share, $779,000, on which there has been paid in $62,106 15; total number of shares, 8,704, subscribed by 1,055 shareholders, who have paid thereon the total of $107,236 15.

SCHEDULE B.

—	Prepaid.		Instalment.		Total.
	No.	Amount.	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$ c.		$ c.	$ c.
Number and amount in force at 31st December, 1896	368	18,595 00	3,960	27,001 25	45,596 25
" issued during 1897	546	26,535 00	3,830	35,104 90	61,639 90
Gross total in force at any time in 1897	914	45,130 00	7,790	62,106 15	107,236 15
	No. of shares.	Amount.			
		$ c.			
Deduct as follows:					
Withdrawn and paid off during 1897	637	9,805 20			
Less minus Expense Fund		1,634 20			
		8,171 00			
Forfeited and lapsed during 1897	247	623 50			
Expense on instalment shares		5,850 90			
Total deduction		14,645 40			14,645 40
Net total remaining in force at 31st December, 1897	914	45,130 00	6,910	47,460 75	92,590 75
Total amount distributed or credited in 1897:					
(1) As interest (paid)		1,058 00		618 71	
Rate of such interest, per cent. per annum 6%.					
(2) As dividends out of profits (credited)		945 11		2,797 56	
Rate or rates per cent. of such dividends 9%.					

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

DR. *Capital and Liabilities.*

—	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No		
A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Permanent stock fully called: total called, $1,500; total paid thereon	1,500 00	
B.—*Terminating Capital Stock or Shares.*		
17. (*d*) Prepaid stock: Total in force 914 shares at $100 per share, on which has been paid	45,130 00	
18. (*e*) Profits or accrued interest on (17) credited or appropriated but not yet paid	1,079 75	
20. (*g*) Instalment stock: Total issue now in force 6,910 shares at $ per share of $100, on which has been paid	47,460 75	
21. (*h*) Profits or accrued interest on (20) credited or appropriated but not paid out	4,888 27	
C.—*Liabilities to Stockholders or Shareholders other than as already shown under A or B, viz.*		
4. Unclaimed dividends on prepaid stock	845 50	
		100,904 27
LIABILITIES TO THE PUBLIC.		
37. Owing to banks (including interest due or accrued)	5,652 67	
40. Other liabilities to the public, viz.:		
41. (*a*) Cash on hand	53 42	
		5,760 09
Total actual liabilities		106,610 36

Balance Sheet as at 31st December, 1897.

		$ c.
	I.—Assets of which the Corporation is the Beneficial Owner.	
	B.—*Debts Secured by Mortgages of Land.*	
9.	(*a*) Debts (other than item 10) secured by mortgage of land	103,625 00
10.	(*b*) Debts secured by mortgaged land held for sale or real estate on hand	1,212 56
	E.—*Cash.*	
32.	(*b*) In bank	244 48
	F.—*Assets not hereinbefore mentioned.*	
37.	(*a*) Loans on stocks	880 00
38.	(*b*) Office furniture	183 32
39.	(*c*) Licenses for New Brunswick, Manitoba, Ontario, Nova Scotia	465 00
	Total of assets owned beneficially by Corporation	106,610 36

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1).	Total. Column 4.
	I.—Received by the Corporation for its own use.		
	A.—*Balances from 31st December, 1896.*	$ c.	$ c.
1.	(*b*) Cash (not already shown under (1)).		
3.	(ii) In bank		2,999 32
	B.—*Sums Received Wholly or Partly on Capital Stock.*		
4.	(*a*) Loans on shares repaid and settled		150 00
6.	(*c*) Sales of fully paid building society stock		1,500 00
7.	(*d*) Sales of prepaid building society stock		26,535 00
8.	(*e*) Dues on instalment building society stock		35,104 90
	C.—*Receipts on Account of Investments, Loans or Debts.*		
	(*a*) On Mortgages of Realty :—		
10.	(i) Principal		7,650 00
11.	(ii) Interest		4,086 78
	(*b*) On other Securities :—		
12.	(i) Principal—special loans		250 00
13.	(ii) Interest "		64 00
	—*Receipts from Real Estate owned beneficially by Corporation.*		
16.	(*a*) Sales (not included in any of foregoing items) real estate		900 00
	E.—*Miscellaneous.*		
18.	(*a*) Sundry		10 45
19.	(*b*) Premium or bonus on loans		3,271 05
20.	(*c*) Transfer and withdrawal fees		103 00
21.	(*d*) Fines		139 70
22.	(*e*) Forfeitures or lapses	623 50	623 50
23.	(*f*) Insurance premiums repaid		14 00
	F.—*Borrowed Money.*		
25.	(*a*) Bank or other advances, discounts or overdrafts		5,652 67
	Totals	623 50	89,054 37

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.
A.—Sums Loaned or Invested on Capital Account.	
Item No. 1. (*a*) Loaned on Mortgages of Realty	67,950 00
(*b*) Loaned or invested in other securities, viz.:—	
2. (i) Loans on instalment stock	1,030 00
B.—Expended on Stock Account.	
9. Dividends paid on terminating stock. (*Extend into column 1*)	1,058 88
11. Paid for terminating stock withdrawn	9,805 20
13. Profits paid on (11)	618 71
15. Terminating stock forfeited or lapsed. (*Extend into column 2*)	623 50
D.—Management Expenses (other than foregoing).	
25. (*a*) Salaries and fees, rent and taxes 26. (*b* ommission or brokerage 28. (*d*) Stationery, postage, printing and advertising	6,606 70
29. (*e*) Law costs	486 43
31. (*g*) Provincial licenses	215 00
32. (*h*) Insurances or taxes advanced on property mortgaged to the corporation	6 70
E.—Other Expenditures, viz.:	
33. (*a*) Discount on advance payments and interest advance from bank	222 71
34. (*b*) Furniture	16 75
35. (*c*) Expenses on real estate	166 15
36. (*d*) Taxes on property	3 16
F.—Balance.	
37. (*b*) Cash in bank	244 48
Totals	89,054 37

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgage of Realty, 10⅛%.	
7. Of the amount mortgages held by the Corporation, nothing is on realty situate in Ontario, and $103,625.00 is on realty situate elsewhere	103,625 00
8. Loans written off or transferred to real estate account during 1897	7,650 00
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897: No., 2; amount	900 00
10. Aggregate market value of the land mortgaged to the Corporation, $310,950.	
11. How often are the securities held by the Corporation valued? Yearly.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Secretary-treasurer, $2,000; assistant, $1,000.	
13. When were the accounts of the Corporation last audited? January, 1898. to 31st December, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed): for 1897, Oliver Dufresne, Montreal; Oliver Dufresne and J. Pelletier, Montreal for 1898.	

THE NIAGARA FALLS BUILDING, SAVINGS AND LOAN ASSOCIATION.

Declaration of incorporation filed with the Clerk of the Peace for the County of Welland, on the 5th March, 1894. (Decl. Book I, 29.)

Incorporated under the Building Societies' Act, R.S.O. 1887, c. 169, s. 2, as amended by 56 V. c. 31, s. 1, which (continued by R.S.O. 1897, c. 205, s. 8 (4)) has the effect of limiting the operations of the Association to the County of Welland.

The lending and the borrowing powers are covered by the Loan Corporations Act, R.S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Niagara Falls Building, Savings and Loan Association of Niagara Falls, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is on Bridge street, in the Town of Niagara Falls, in the Province of Ontario.

The Board is constituted of fifteen directors holding office for three years.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Frank LeBlond	President	Niagara Falls, Ont.	1st April, 1897	31st March, 1900
R. P. Slater	Vice-President.	" ..	" 1897	" 1900
W. L. Doran	Director	" ..	" 1896	" 1899
J. C. Rothery	Director	" ..	" 1895	" 1898
Jas. A. Lowell	Director	" South..	" 1895	" 1898
J. A. McRae	Director	" ..	" 1895	" 1898
Jas. Bampfield	Director	" " ..	" 1895	" 1898
J. B. Stephens	Director	" Ont..	" 1896	" 1899
W. W. Woodruff	Director	" ..		
A. B. Brown	Director	" ..	" 1896	
W. W. Robertson	Director	" Centre..		
John Robinson	Director	" ..	" 1895	" 1898
Alex. Logan	Director	" ..	" 1897	" 1900
Duncan Stewart	Director	" Ont..	" 1897	" 1900
James Barry	Treasurer	" ..		
Edith Edmand	Secretary	" ..		

A. Permanent capital stock: Total amount authorized, none; total amount subscribed, none, as more particularly set out in Schedule A hereto.

B. Terminating or withdrawable stock: total amount subscribed, $147,790, made up as follows:—

62 11/13 shares "prepaid" stock other than above) at $130 per share, $8,170, on which there has been paid in $8,170; 1,074 shares instalment stock (payable by fixed periodical payments) at $130 per share, $139,620, on which there has been paid in $29,211.25. Total number of shares, 1,136 1/13, subscribed by 147 shareholders, who have paid thereon the total of $37,381.25.

SCHEDULE B.

	Prepaid.		Instalment.		Total.
	No.	Amount.	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$		$	$
Number and amount in force at 31st December, 1896.	$23\frac{11}{13}$	3,100	931	127,530	130,630
" issued during 1897	$42\frac{7}{13}$	5,530	282	36,660	42,190
Gross total in force at any time in 1897	$66\frac{5}{13}$	8,630	1,263	164,190	172,820
Deduct as follows:	No. of shares. / Amount.				
Withdrawn and paid off during 1897	$192\frac{7}{13}$ / $25,030				
Total deduction	$192\frac{7}{13}$ / 25,030	$3\frac{7}{13}$	460	189	24,570	25,030
Net total remaining in force at 31st December, 1897	$62\frac{11}{13}$	8,170	1,074	139,620	147,790
Total amount distributed or credited in 1897 :—					
(2) As dividends paid out of profits		306 27		2,031 32	
Rate or rates per cent. of such dividends.	6 and $6\frac{1}{2}$%			8%	

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

Dr.

Item No.		$ cts.	$ cts.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	B.—*Terminating Capital Stock or Shares.*		
17.	(*d*) Prepaid stock: total in force, $62\frac{11}{13}$ shares at $130 per share, on which has been paid	8,170 00	
20.	(*g*) Instalment stock: total issue now in force, 1,074 shares at $130 per share, $139,620, on which has been paid	29,211 25	
21.	(*h*) Profits or accrued interest on (20) credited or appropriated but not paid out	3,677 44	
22.	(*i*) Profits or accrued interest on (20) not credited or appropriated.	1,747 60	
			42,806 29
	LIABILITIES TO THE PUBLIC.		
40.	Other liabilities to the public, viz. :—		
41.	(a) Outstanding cheques		11 25
	Total actual liabilities		42,817 54

Balance Sheet as at 31st December, 1897.

Cr.

	$ c
I.—Assets of which the Corporation is the Beneficial Owner.	
B.—*Debts secured by Mortgages of Land.*	
9. (*a*) Debts (other than item 10) secured by mortgages of land	42,380 00
E.—*Cash.*	
32. (*b* In bank	287 54
F.—*Assets not Hereinbefore Mentioned.*	
37. (*a*) Office furniture	150 00
Total of assets owned beneficially by Corporation	42,817 54

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4.)
I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.
Item No. A.—*Balances from 31st December, 1896.*			
(*b*) Cash (not already shown under (1)):			
2. (i) On hand		9 00	
3. (ii) In bank		1,024 44	
			1,033 44
B.—*Sums Received Wholly or Partly on Capital Stock.*			
7. (*d*) Sales of prepaid building society stock		5,530 00	
8. (*e*) Dues on instalment building society stock (not including dues from borrowers)		9,521 75	
			15,051 75
C.—*Receipts on Account of Investments, Loans or Debts.*			
(*a*) On Mortgages of Realty:			
10. (i) Principal		7,874 25	
11. (ii) Interest		2,056 95	
			9,931 20
E.—*Miscellaneous.*			
19. (*b*) Premium or bonus on loans	980 00		
20. (*c*) Membership or entry fees (being income of Corporation)	74 00		
21. (*d*) Fines	30 50		
			1,084 50
F.—*Borrowed Money.*			
25. (*a*) Bank or other advances, discounts or overdrafts		7,150 00	7,150 00
G.—*Receipts from other sources, viz.:*			
30. (*a*) Rent (sub-letting office)	30 00		30 00
(*b*) Appraisers' fees advanced in 1896		1 50	1 50
Totals			34,282 39

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. Column (2).	Total. (Column 4.)
	$ c.	$ c.	$ c.
I.—Expended on Corporation Account.			
A.—*Sums Loaned or Invested on Capital Account.*			
Item No. 1. (a) Loaned on Mortgages of Realty	.....	12,740 00	12,740 00
B.—*Expended on Stock Account.*			
9. Dividends paid on terminating stock. (*Extend into Column 1*)	306 27	.....	306 27
11. Paid for terminating stock withdrawn	.....	7,155 00	7,155 00
13. Profits paid on (11) and (12)	.....	422 69	422 69
C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*			
18. (a) Bank account (principal and interest)	.....	12,857 62	12,857 62
D.—*Management Expenses (other than foregoing).*			
25. (a) Salaries and fees	306 50		
26. (b) Commission or brokerage	10 05		
28. (d) Stationery, postage, printing and advertising	35 72		
30. (f) Fuel, rent, taxes (other than in 32) and rates	75 00		
31. (g) Travelling expenses	10 00		437 27
E.—*Other Expenditures, viz.:*			
33. (a) Light, $18.75 ; cleaning office, $3.00	21 75		
34. (b) Safe lock	17 50		
35. (c) Auditors' fees	18 00		
36. (d) Government registration fee	30 00		87 25
F.—*Balance.*			
(b) Cash in various banks	276 29	.....	276 29
Totals	.....	.....	34,282 39

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6%.	
7. Of the mortgages held by the Corporation $42,380.00 is on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897, none.	
10. Aggregate market value of the land mortgaged to the Corporation, $60,050 00.	
11. How often are the securities Corporation held by the valued ? Every six months.	
12. (a) What officers of the Corporation are under bond and for what sum respectively ? Treasurer, $2,000; solicitor, $1,000.	
13. When were the accounts of the Corporation last audited ? 30th September, 1897.	
14. Names and address of the auditors respectively for 1897 : J. C. Rothery, J. E. Stevenson and J. D. Dickson.	

THE ONTARIO PERMANENT BUILDING AND LOAN ASSOCIATION.

Head Office, Woodstock, Ont.

Incorporated under the Building Societies' Act (R.S.O. 1887 c. 169) by declaration filed with the Clerk of the Peace for the County of Oxford on the 6th October, 1892. (Decl. Book I., 27).

The lending and the borrowing powers are governed by the Loan Corporations Act, R.S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of The Ontario Permanent Building and Loan Association Woodstock, Ont., at the 30th November, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 430 Dundas Street, in the Town of Woodstock, in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 30th November, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Dr. A. B. Welford	President	Woodstock	21st January, 1897.	20th January, 1898.
W. J. Millican	Vice-Presidents.	Galt	"	"
Geo. Coldbeck	Vice-Presidents.	Woodstock	"	"
Geo. Ball	Director	Barrie	"	"
James Holmes	Director	Woodstock	"	"
W. J. Bickerton	Director	"		"
S. G. McKay	Director	"	"	"
R. W. Ball	Manager / Secretary	"		

A. Permanent capital stock: total amount authorized, $; total amount subscribed 30th November, 1897, $73,900,00, on which has been paid $72,600, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 30th Nov., 1897.			Total amount of actual payments thereon.	Total unpaid and constituting an asset of the corporation.
	No. of shares.	Par value of shares.	——		
		$	$ c.	$ c.	$ c.
1. Fully paid	....	....	73,900 00	72,600 00	
Totals.....	.....	.....	73,900 00		

LIST OF SHAREHOLDERS AS AT 30TH NOVEMBER, 1897.

(Not printed.)

B. Terminating or withdrawable stock: Total amount subscribed, $2,100,300.00, made up as follows:

Shares "Prepaid" stock (other than above) including profits) at $50 per share of $100 on which there has been paid in $231,175.90 including profits; shares instalment stock, including mortgages (payable by fixed periodical payments) at 30c., 60c., and $1.00 per share of $100, on which there has been paid $110,258.32 including profits; total number of shares 3,845, subscribed by "A," "B," "B1" and "C" shareholders, who have paid thereon the total of $341,434.22 including profits.

SCHEDULE B.

	Prepaid, C.		Instalment, A, B and B1.		Total.
	No.	Amount.	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$ c.		$ c.	$ c.
Number and amount in force at 30th Nov., 1896.	3,193	*153,407 27	12,929	*70,528 43	*223,935 70
" issued during 1897.....	1,383	68,905 71	4,846	36,367 39	
Gross total in force at any time in 1897	4,576	222,312 98	17,775	106,895 82	
Deduct as follows: (No. of shares / Amount.)					
Withdrawn and paid off during 1897..... 1,139 $ 6,113 44					
Forfeited and lapsed during 1897..... 180 114 02					
29 "C" cancelled (not paid) 29					
Total deduction.. 1,348 6,227 46	29	....	1,319	6,227 46	
	.....	222,312 98	.....	100,668 36	
Profits added	.....	8,862 92	....	9,589 96	
Net total remaining in force at 30th Nov., 1897.	4,547	231,175 90	16,456	110,258 32	341,434 22
Total amount distributed or credited in 1897:					
(1) As interest.....	.... ..	19,375 73	....	9,589 96	
Rate of such interest per cent. per annum	.....	9½%	....	12%	
(2) As interest out of profits.....	.....	10,410 25	.....		
Rate or rates per cent. of such dividends.	.....	6%	.....		

*Including profits.

BALANCE SHEET AS AT 30TH NOVEMBER, 1897.

Capital and Liabilities.

DR.

Item No.		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	A.—*Permanent Capital Stock or Shares.*		
1.	(*a*) Ordinary capital fully called : total shares issued, $73,900 ; total paid thereon	72,600 00	
4.	(*d*) Dividends declared in respect of (1), but not yet paid	3,714 20	76,314 20
7.	(*g*) Contingent fund		520 46
	B.—*Terminating Capital Stock or Shares.*		
17.	(*d*) Prepaid stock : total in force 4,547 shares at $50 per share of $100, on which has been paid, including profits of previous year	211,800 17	
18.	(*e*) Profits (17) credited 30th November, 1897	19,375 73	231,175 90
20.	(*g*) Instalment stock : total issue now in force, 16,456 shares at 30c., 60c. and $1.00 per share of $100.00, on which has been paid, including profits of previous years	100,668 36	
21.	(*h*) Profits on (20) credited 30th November, 1897	9,589 96	110,258 32
	C.—*Liabilities to Stockholders or Shareholders other than as already shown under A or B, viz.*		
24.	Borrowers—Being amount of outstanding orders held in trust (as per contra) pending completion of buildings		8,375 00
			426,643 88
	LIABILITIES TO THE PUBLIC.		
40.	Other liabilities to the public, viz.:		
41.	(*a*) Overdraft on trust company	10,036 12	10,036 12
	Total actual liabilities		436,680 00

BALANCE SHEET AS AT 30TH NOVEMBER, 1897.

CB.

—	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land.....	425,400 00	
10. (*b*) Debts secured by mortgaged land held for sale.....	900 00	426,300 00
C.—*Debts not above enumerated for which the Corporation holds securities as follows:*		
21. (*i*) Debts secured only by terminating stock or shares of the Corporation.....	2,005 00	2,005 00
F.—*Assets not Hereinbefore Mentioned.*		
37. (*a*) Amount of outstanding cheques held in trust by Trusts Company to be paid borrowers on completion of their buildings (as *per contra*).	.....	8,375 00
Total of assets owned beneficially by Corporation	.....	4 [illegible] 00

Cash Account.

Receipts for the year ending 30th November, 1897.

	Amount carried to earnings, maintenance or contingent account.	Amount carried to capital account.		Profit and loss
		Terminating capital.	Permanent capital including reserve.	Total.
	(Column a.)	(Column 1.)	(Column 2.)	(Column 3.)
I.—Received by the Corporation for its own use.				
A.—*Balances.*	$ c.	c.	$ c.	$ c.
Item No. 1. (a) Capital account, expense portion on all classes of stock net	10,504 54			
B.—*Sums received wholly or partly on Capital Stock.*				
6. (c) Sales of fully paid building society stock			44,700 00	
7. (d) Sales of prepaid building society stock		68,905 71		
8. (e) Dues on instalment building society stock		28,222 86		
9. (f) Premiums on (7)				2,013 0
C.—*Receipts on account of Investments, Loans or Debts.*				
(a) On Mortgages of Realty:				
10. (i) Principal—Instalment mortgage dues		29,582 65		
11. (ii) Interest and premium				28,762 37
(b) On other securities:				
12. (i) Principal—Stock, loans, repaid		420 00		
E.—*Miscellaneous.*				
20. (c) Membership or entry fees (being income of corporation)	6,685 75			
21. (d) Fines				981 31
22. (e) Forfeitures or lapses				114 02
G.—*Receipts from other sources, viz:*				
30. (a) Transfer fees				79 50
(b) Profits on withdrawals				216 07
(c) Surplus transferred from expense fund				1,329 46
16. (d) Sundry other sources				66 90
Totals	17,190 29	127,131 22	44,700 00	33,562 63
Grand total columns 1, 2 and 3				205,393 85

Cash Account.

Expenditure for the year ending 30th November, 1897

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Disbursements *re* Columns 1, 2 and 3.	Apportionment *re* Column 3. Profit and loss account.
I.—Expended on Corporation Account.	$ c.	$ c.	$ c.
Item No. A.—*Sums Loaned or Invested on Capital Account.*			
1. (*a*) Loaned on Mortgages of Realty		173,400 00	
(*b*) Loaned or invested in other securities :			
2. (i) Association stock		1,735 00	
4. (iii) Interest on overdraft			293 11
5. (iv) Contingent fund account			126 58
B.—*Expended on Stock Account.*			
8. Profit apportioned on permanent stock. (Dividend paid on permanent stock)		1,705 50	4,177 25
9. Profits apportioned on terminating stock			28,965 69
10. Interest paid on Class C stock		10,410 25	
11. Paid for terminating stock withdrawn		6,113 44	
C.—*Borrowed Money (other than foregoing) or Interest thereon paid, viz.:*			
18. (*a*) Advance from Trust Co. repaid		10,218 80	
19. (*b*) Interest on advance from Trusts Co		293 11	
Expense portions Classes "C" and "D" to November 30th, 1897		1,517 75	
D.—*Management Expenses other than foregoing.*			
25. (*a*) Salaries and fees	3,215 50		
26. (*b*) Commission or brokerage, agents	7,411 75		
28. (*d*) Stationery, postage, printing and advertising	696 19		
E.—*Other Expenditures, viz.:*			
33. (*a*) Sundry open accounts	1,494 73		
34. (*b*) Transferred to loan fund profit and loss acct	1,329 46		
35. (*c*) Commission, Trusts Co	600 00		
38. (*d*) Registration fee	55 00		
Auditors fees	165 00		
Sundry rents	2,222 66		
Totals	17,190 29	205,393 85	33,562 63

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 30TH NOVEMBER, 1897.

	$ c.
Total profits for the fifth financial year ending 30th November, 1897	33,562 63
Loans completed during the fifth year	173,400 00
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 10.8%.	
7. Of the mortgages held by the Corporation $425,400.00 is on realty situate in Ontario	425,400 00
8. Loans written off or transferred to real estate account during 1897	900 00
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897—number, 1; amount, $500.00.	
10. Aggregate market value of the land mortgaged to the Corporation, $888,932.00 (average rate of loan on appraised value 47.95%)	888,932 00
11. How often are the securities held by the Corporation valued?	
Total insurance held by Company to cover loans	470,200 00
12. (a) What officers of the Corporation are under bond and for what sum respectively? The loan fund and securities deposited are deposited with Trusts Company; local agents are under bonds.	
13. When were the accounts of the Corporation last audited? December, 1897,	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed) F. S. Sharpe, F.C.A., St. John, N.B.; Spencer H. Over, Toronto.	

THE OWEN SOUND BUILDING AND SAVINGS SOCIETY.

Head Office, Owen Sound, Ontario.

Incorporated under the Building Societies' Act (R. S. O. 1887, c. 169) by declaration filed with the Clerk of the Peace for the County of Grey, on the 1st April, 1889.

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of The Owen Sound Building and Savings Society, of Owen Sound, Ont., at the 31st October, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is on Poulette street, in the Town of Owen Sound, in the Province of Ontario.

The Board is constituted of ten directors holding office for two years, five retiring each year.

The directors and chief executive officers of the Corporation at the 31st October, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
George Inglis	President	Owen Sound	30th July, 1897	In two years.
John Harrison	Vice-President	"	"	"
John Waites	Director and Treasurer	"	"	In one year.
Alfred J. Spencer	Director	"	"	In two years.
C. A. Fleming	Director	"	"	In one year.
John Harkness	Director	"	"	"
H. B. Harrison	Director	"	"	"
N. P. Horton	Director	"	"	"
James R. Brown	Director	"	"	"
W. A. Bishop	Manager and Secretary	"	"	In two years.

A. Permanent capital stock: Total amount authorized, none; total amount subscribed, none, as more particularly set out in Schedule A hereto.

B. Terminating or withdrawable stock : Total amount subscribed, $99,950, made up as follows :

499¾ shares instalment stock (payable by fixed periodical payments) at $200 per share, $99,950, on which there has been paid in $44,573.57. Total number of shares , subscribed by shareholders, who have paid thereon the total of $44,573.57.

SCHEDULE B.

			Instalment.	
			No.	Amount.
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.				$ c.
Number and amount in force at 31st October, 1896			589½	117,900 00
" issued during 1896-7			10	2,000 00
Gross total in force at any time in 1896-7			599½	119,900 00
	No. of shares.	Amount.		
Deduct as follows:		$ c.		
Withdrawn and paid off during 1896-7	99¾	19,950 00		
Total deduction	99¾	19,950 00	99¾	19,950 00
Net total remaining in force at 31st October, 1897			499¾	99,950 00
Total amount distributed or credited in October, 1897:				
(2) As dividends out of profits				2,157 67
Rate or rates per cent. of such dividends, 4% on paid up.				

BALANCE SHEET AS AT 31ST OCTOBER, 1897.

Capital and Liabilities.

DR.

		$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).			
Item No.	B.—*Terminating Capital Stock or Shares.*		
20.	(*g*) Instalment stock: Total issue now in force, 499¾ shares at $ per share of $200, on which has been paid	44,573 57	
21.	(*h*) Profits or accrued interest on (20) credited or appropriated but not paid out	14,575 36	
22.	(*i*) Contingent Fund	5,118 32	64,267 25
	LIABILITIES TO THE PUBLIC.		
27.	Deposits	6,690 57	
28.	Interest on deposits, due, or accrued or capitalized	107 64	
37.	Owing to banks (including interest due or accrued)	3,375 73	
40.	Other liabilities to the public, viz.:		
41.	(*a*) Sundry persons	54 06	10,227 94
	Total actual liabilities		74,495 19

BALANCE SHEET AS AT 31ST OCTOBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land, including interest	67,573 58	
10. (*b*) Debts secured by mortgaged land held for sale	1,574 00	
		69,147 58
12. (*d*) Of the debts mentioned in items 9, 10 and 11 the sum of $2,865,40 is due by directors or officers of the Corporation.		
C.—*Debts not above Enumerated for which the Corporation Holds Securities as follows:*		
21. (*i*) Debts secured only by terminating stock or shares of the Corporation, including interest	5,320 66	5,320 66
D.—*Unsecured Debts.*		
27. (*a*) Fines on terminating shares	26 95	26 95
Total of assets owned beneficially by Corporation		74,495 19

CASH ACCOUNT.

Receipts for the year ending 31st October, 1897.

Item No.		Terminating Capital. (Column 1.)
	I.—RECEIVED BY THE CORPORATION FOR ITS OWN USE.	$ c.
	A.—*Balances from 31st October, 1896.*	
1.	(*a*) Capital account	988 77
	B.—*Sums received wholly or partly on Capital Stock.*	
8.	(*c*) Dues on Instalment Building Society Stock	5,353 33
	C.—*Receipts on Account of Investments, Loans or Debts.*	
	(*a*) On Mortgages of Realty:	
10.	(i) Principal	6,493 69
11.	(ii) Interest	3,726 32
	(*b*) On other securities:	
12.	(i) Principal	3,345 15
13.	(ii) Interest	220 84
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*	
17.	(*b*) Rent	19 50
	E.—*Miscellaneous.*	
20.	(*c*) Membership or entry fees (being income of Corporation)	5 00
21.	(*d*) Fines	78 30
	F.—*Borrowed Money.*	
25.	(*a*) Bank or other advances, discounts or overdrafts	3,375 73
26.	(*b*) Borrowed by taking deposits	4,776 00
	G.—*Receipts from other Sources, viz.:*	
30.	(*a*) Transfer fees	2 00
	(*b*) Valuation fees	21 00
	Totals	28,405 63

Cash Account.

Expenditure for the year ending 31st October, 1897.

Item No.		Amount carried to capital account. Terminating capital. (Column 2.)
	I.—Expended on Corporation Account.	$ c.
	A.—*Sums Loaned or Invested on Capital Account.*	
1.	(*a*) Loaned on Mortgages of Realty	5,280 04
	(*b*) Loaned or invested in other securities, viz.:	
2.	(i) Loans on stock	3,160 00
	B.—*Expended on Stock Account.*	
10.	Interest paid on terminating stock	311 15
11.	Paid for terminating stock withdrawn	8,245 37
13.	Profits paid on (11) and (12)	886 82
	C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*	
18.	(*a*) Bank account (interest)	118 75
19.	(*b*) Deposits: Principal, $8,935.00; interest, $566 36	9,501 36
	D.—*Management Expenses (other than foregoing.)*	
25.	(*a*) Salaries and fees	624 25
28.	(*d*) Stationery, postage, printing and advertising	142 89
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates	57 55
32.	(*h*) Insurances or taxes advanced on property held under power of sale	56 45
	E.—*Other Expenditures, viz.:*	
33.	(*a*) Refund of interest	4 00
34.	(*b*) Valuation fees	17 00
	Totals	28,405 63

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST OCTOBER, 1897.

	$	c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898. None.		
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None.		
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4½ %.		
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 7.89 %; on other securities, 8 %.		
7. Of the mortgages held by the Corporation, all are on realty situate in Ontario.		
8. Loans written off or transferred to real estate account during 1897.....		403 50
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No., 1; amount.....		403 50
10. Aggregate market value of the land mortgaged to the Corporation?		
11. How often are the securities held by the Corporation valued? When loan is made or in arrears.		
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? The Manager and Secretary-Treasurer, $1,000 each.		
13. When were the accounts of the Corporation last audited? 30th April, 1897.		
14. Names and address of the auditors respectively for 1897 and 1898: J. Tolton and A. F. Armstrong, Owen Sound.		

THE PEOPLES' BUILDING AND LOAN ASSOCIATION OF LONDON, ONTARIO.

Head Office, London, Ontario.

Incorporated under the Building Societies Act, (R.S.O. 1887, c 169), by declaration filed with the Clerk of the Peace for the County of Middlesex on 22nd June, 1892. (Decl. Book I, 75.)

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Peoples' Building and Loan Association of London, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 137 Dundas street, in City of London, in the Province of Ontario.

The Board is constituted of nine directors, holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Judge Elliott	President	London, Ont..	21st October, 1896..	16th March, 1898.
A. A. Campbell	Vice-President	" ..	" 1896..	" 1898.
W. H. Moorhouse, M. D	Director	" ..	" 1896..	" 1898.
Richard Southam	Director	" ..	" 1896..	" 1898.
Robert Reid, Jr	Director	" ..	" 1896..	" 1898.
George Taylor	Director	" ..	" 1896..	" 1898.
I. F. Hellmuth	Director	" ..	" 1896..	" 1898.
D. H. Piper, M.D	Director	" ..	" 1896..	" 1898.
Wm. Spittal	Sec'y-Treas	" ..	" 1896..	" 1898.

A. Permanent capital stock: total amount authorized, ; total amount subscribed, $43,700, as more particularly set out in Schedule A hereto.

Schedule A.

(*a*).—*Fixed and permanent capital stock created by virtue of Building Society Acts.*

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. shares.	Par value.			
		$	$ c.	$ c	$ c.
1. Fully paid	437	100	43,700 00	27,609 29	16,090 71
Totals	437	100	43,700 00	27,609 29	16,090 71

B. Terminating or withdrawable stock: total amount subscribed, $1,023,000 made up as follows:—

688 shares "prepaid" stock (other than above), at $100 per share, $68,800, on which there has been paid in $44,486.09; 9,542 shares instalment stock (payable by fixed periodical payments) at $100 per share, $954,200, on which there has been paid in $167,231.15. Total number of shares, 10,230, subscribed by 1,547 shareholders, who have paid thereon the total of $211,717.24.

SCHEDULE B.

	Prepaid.		Instalment.		Total.
	No.	Amount.	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$		$	$
Number and amount in force at 31st December, 1896.	750	75,000 00	7,845	784,500 00	859,500 00
" issued during 1897	....	.....	4,071	407,100 00	407,100 00
Gross total in force at any time in 1897	750	75,000 00	11,916	1,191,600 00	1,266,600 00
Deduct as follows: (No. of shares. / Amount.)					
Withdrawn and paid off during 1897 — 1,580		$ 158,000			
Forfeited and lapsed during 1897 — 856		85,600			
Total deduction — 2,436	62	6,200 00	2,374	237,400 00	243,600 00
Net total remaining in force at 31st December, 1897	688	68,800 00	9,542	954,200 00	1,023,000 00
Total amount distributed or credited in 1897:—					
(1) As interest	....	3,859 05	.....	16,864 85	20,723 90
Rate of such interest per cent. per annum	....	.. ..	.....	.....	... .
(2) As dividends out of profits	....	837 00	.....	.....	837 00
Rate or rates per cent. of such dividends	....	8%	.....	11%	.....

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

Item No.		$ c.	$ cts.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	Permanent Capital Stock or Shares.		
1.	(*a*) Ordinary capital fully called: Total called, $19,100; total paid thereon	19,100 00	
2.	(*b*) Ordinary capital, total called $24,600; total paid thereon	8,509 29	
6.	(*f*) Reserve fund in respect of (1), (17) and (20)	2,500 00	
12.	(*l*) Contingent fund in respect of (1), (2), (17) and (20)	607 82	
			30,717 11
	B.—*Terminating Capital Stock or Shares.*		
17.	(*d*) Prepaid stock: total in force, 688 shares at $100 per share, on which has been paid	44,486 09	
18.	(*e*) Profits or accrued interest on (17) credited or appropriated but not yet paid		
19.	(*f*) Profits or accrued interest on (17) not credited or appropriated		
20.	(*g*) Instalment stock: total issue now in force, 9,542 shares of $100, on which has been paid	162,846 63	
21.	(*h*) Profits or accrued interest on (20) credited or appropriated but not paid out		
22.	(*i*) Profits or accrued interest on (20) not credited or appropriated		
23.	(*j*) Instalments or premiums paid on (20) in advance	4,384 52	211,717 24
	Total actual liabilities	.....	242,434 35

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	200,314 29	
10. (*b*) Debts secured by mortgaged land held for sale	7,894 26	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	5,055 10	213,263
C.—*Debts not above enumerated for which the Corporation holds Securities as follows:*		
21. (*i*) Debts secured only by terminating stock or shares of the Corporation	12,338 00	
22. (*j*) Debts secured by dues in course of collection	2,920 29	
23. (*k*) Debts secured by expense fund in course of collection	485 42	15,743
E.—*Cash.*		
31. (*a*) On hand	2,488 63	
32. (*b*) In bank	10,548 28	13,036 91
F. *Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture		390 08
Total of assets owned beneficially by Corporation		242,434 35

Cash Account.

Receipts from 31st August, 1896, to 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account.		Totals. (Column 4.)
		Terminating capital. (Column 2.)	Permanent capital, including reserve. (Column 3.)	
I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.	$
Item No. B.—*Sums received wholly or partly on Capital Stock.*				
6. (c) Sales of fully paid building society stock			18,959 98	18,959 98
8. (c) Dues on instalment building society stock		71,488 79		71,488 79
C.—*Receipts on account of Investments, Loans or Debts.*				
(a) On Mortgages of Realty :				
10. (i) Principal				31,448 95
11. (ii) Interest	24,660 92			24,660 92
(b) On loans and terminating shares :				
12. (i) Principal				7,081 00
(c) Unsecured debts :				
14. (i) Bills receivable				26 50
D.—*Receipts from Real Estate Owned Beneficially by Corporation.*				
16. (a) Sales (not included in any of foregoing items)				4,737 57
17. (b) Rents				
E.—*Miscellaneous.*				
18. (a) Commission, brokerage (or remuneration as corporate agent, trustee, etc.	13,569 66			
21. (d) Fines	558 79			
22. (e) Forfeiture or lapses (less interest on withdrawals)	204 62			14,333 07
G.—*Receipts from other sources, viz.* :				
30. (a) Expense account credited	61 66			
(b) Transfer fees	24 00			
(c) Accrued expense fund	237 57			323 23
(a) Suspense account				94 05
Totals				173,154 06

Cash Account.

Expenditure from 31st August, 1896, 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4.)
	I.—Expended on Corporation Account.			
	A.—*Sums loaned or invested on Capital Account.*	$ c.	$ c.	$ c.
1.	(*a*) Loaned on Mortgages of Realty			83,695 82
	(*b*) Loaned or invested in other securities, viz.:—			
2.	(i) On terminating shares		11,913 00	11,913 00
6.	(*e*) Real estate			10,242 24
7.	(*d*) Written off real estate			370 94
	B.—*Expended on Stock Account.*			
8.	Dividends paid on permanent stock	1,140 22		
9.	Dividends paid on terminating stock. (Prepaid)	3,859 05		
10.	Interest paid on terminating stock			
11.	Paid for terminating stock withdrawn		28,867 17	28,867 17
	Discount advance payment	269 44		
	Office furniture	189 00		
	Taxes on income	147 67		
				5,605 38
	C.—*Borrowed money (other than foregoing) or interest thereon paid, viz.:*			
18.	(*a*) Bank account (principal and interest). (Bills payable)			5,367 52
	D.—*Management expenses (other than foregoing).*			
25.	(*a*) Salaries and fees	3,166 66		
26.	(*b*) Commission or brokerage	8,361 97		
28.	(*d*) Stationery, postage, printing and advertising	1,224 89		
29.	(*e*) Law costs	407 60		
30.	(*f*) Fuel, rent, taxes (other than 32) and rates	48 23		
31.	(*g*) Travelling expenses	138 55		
32.	(*h*) Accrued expense fund	485 42		
				13,833 32
	E.—*Other expenditures, viz.:*			
33.	(*a*) Bank commission on cheques	119 76		
34.	(*b*) Guarantee bonds	72 00		
35.	(*c*) Registration fee	30 00		
				221 76
	F.—*Balance.*			
37.	(*a*) Cash on hand	2,488 63		
	(*b*) Cash in banks	10,548 28		
				13,036 91
	Totals			173,154 06

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of Debentures issued by the Corporation in Canada which will mature in 1898, none.	
2. Amount of Debentures issued by the Corporation elsewhere which will mature in 1898, none.	
3. Amount of other existing obligations of the Corporation which will mature in 1898, none.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	100 00
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty: 10 4-5% on instalment loans; 6% straight loans; other securities, $10\frac{4}{5}$%	
7. Of the mortgages held by the Corporation, $205,369.39 is on realty situate in Ontario, and none on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897	10,242 24
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897. No., 4; amount	7,800 00
10. Aggregate market value of land mortgaged to Corporation, $376,200.	
11. How often are the securities held by the Corporation valued? Property on which straight loans are made is valued every three years.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Managing-Director and Secretary-Treasurer $3,000 each.	
13. When were the accounts of the Corporation last audited? 26th February, 1898.	
14. Names and address of the auditors respectively for 1897, John Overell and George W. Hayes.	

THE PETERBOROUGH WORKINGMEN'S BUILDING AND SAVINGS SOCIETY.

Head Office, Peterborough, Ontario.

Incorporated under the Building Societies Act (R. S. O. 1887, c. 169) by declaration filed with the Clerk of the Peace for the County of Peterborough on the 17th January, 1889. (Decl. Book I, 47.)

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Peterborough Workingmen's Building and Savings Society of Peterborough at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 368 Water street, in the Town of Peterborough, in the Province of Ontario.

The Board is constituted of twelve directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date.)	Will end (date.)
John Lynch	President	Peterborough	19th January 1897	1st January, 1898.
T. B. McGrath	Vice-President	"	"	"
M. Riley	Director	"	"	"
W. Hinchcliffe	Director	"	"	"
J. J. Dolan	Director	"	"	"
R. Sheehy	Director	"	"	"
A. McDonald	Director	"	"	"
A. J. Gough	Director	"	"	"
H. LeBrun	Director	"	"	"
James Lynch	Director	"	"	"
A. Minty	Trustee	"	"	"
C. Grant	Trustee	"	"	"
J. Minty	Treasurer	"	"	"
J. Corkery	Secretary	"	"	"

A. Permanent capital stock: Total amount authorized, none; total amount subscribed, none, as more particularly set out in Schedule A hereto:

B. Terminating or withdrawable stock: total amount subscribed, $53,000, made up as follows: 265 shares instalment stock (payable by fixed periodical payments) at $200 per share $53,000; on which there has been paid in $17,544.70. Total number of shares, 265 subscribed by shareholders who have paid thereon the total of $17,544.70.

SCHEDULE B.

Shares of Terminating or Withdrawable Stock.	Instalment. No.	Instalment. Amount.	Total.
		$ c.	$ c.
Number and amount in force at 31st December, 1896	257	15,035 00	15,035 00
Amount credited to shareholders at 31st December, 1896	.... ..	2,570 00	2,570 00
Number and amount issued during 1897	48	496 70	496 70
Gross total in force at any time in 1897	305	18,101 70	18,101 70
Deduct as follows:	No. of shares.	Amount.	
		$ c.	
Withdrawn and paid off during 1897	33	557 00	
Retired by Corporation during 1897	7	292 00	
Total deduction	40	849 00	
Net total remaining in force at 31st December, 1897	265	17,544 70	
Total amount distributed or credited in 1897:			
(1) As interest			4,896 16

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS.)		
Item No. B.—*Terminating Capital Stock or Shares.*		
20. (*g*) Instalment stock: Total issue now in force, 265 shares at ..... per share of $200, on which has been paid	17,544 70	
21. (*h*) Profits or accrued interest on (20) credited or appropriated but not paid out	4,869 16	
		22,413 86
LIABILITIES TO THE PUBLIC.		
27. Deposits	608 70	608 70
Total actual liabilities		23,022 56

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
1.—Assets of which the Corporation is the Beneficial Owner.		
B.—Debts Secured by Mortgages of Land.		
9. (*a*) Debts (other than item 10) secured by mortgages of land	15,810 00	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	189 50	
		15,999 50
12. (*d*) Of the debts mentioned in items 9, 10 and 11 the sum of $6,950.00 is due by directors or officers of the Corporation. (Not extended)		
C.—Debts not above Enumerated for which the Corporation Holds Securities as follows:		
21. (*i*) Debts secured only by terminating stock or shares of the Corporation		4,220 00
E.—Cash.		
32. (*b*) In bank		2,803 06
Total of assets owned beneficially by Corporation		23,022 56

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. Column 2.)	Total. (Column 4.)
I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.
A.—*Balance from 31st December, 1897.*			
Item No. 1. (*a*) Capital account			1,141 12
B.—*Sums Received Wholly or Partly on Capital Stock.*			
8. (*c*) Instalments on shares building society stock		3,310 70	3,310 70
C.—*Receipts on Account of Investments, Loans or Debts.*			
(*a*) On Mortgages of Realty:—			
10. (i) Principal			25 37
11. (ii) Interest	1,263 40		1,263 40
(*b*) On other securities:—			
13. (ii) Interest or dividends	36 65		36 65
E.—*Miscellaneous.*			
20. (*c*) Membership or entry fee (being income of corporation)	11 50		11 50
21. (*d*) Fines and transfer fees	41 67		41 67
Totals	1,353 22	3,310 70	5,830 41

Cash Account.

Expenditure for the year ending 31st December, 1897.

—	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4.)
	$ c.	$ c.	$ c.
I.—Expended on Corporation Account.			
A.—*Sums Loaned or Invested on Capital Account.*			
Item No. 1. (*a*) Loaned on Mortgages of Realty			2,320 00
B.—*Expended on Stock Account.*			
11. Paid for terminating stock withdrawn	35 35		35 35
14. Paid for terminating stock retired. (*Extend into column 2*)		557 00	557 00
D.—*Management Expenses (other than foregoing).*			
25. (*a*) Salaries and fees	70 00		
28. (*d*) Postage and printing	3 00		
30. (*f*) Rent	10 00		
32. (*h*) Registration fees	32 00		115 00
F.—*Balance.*			
(*b*) Cash in banks			2,803 06
Totals	150 35	557 00	5,830 41

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
6. Average rate of interest per annum received by the corporation during 1897 on Mortgages of Realty, 6%.	
7. Of the mortgages held by the Corporation, $15,810 is on realty situate in Ontario.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Secretary, $1,000; Treasurer, $1,000.	
13. When were the accounts of the Corporation last audited? 31st December, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). F. E. Bell, Peterboro.	

THE PROVINCIAL BUILDING AND LOAN ASSOCIATION.

Head Office, Toronto, Ontario.

Incorporated under the Building Societies Act (R.S.O. 1887, c. 169) by declaration filed in the office of the Clerk of the Peace for the County of York on the 9th November, 1891 (Decl. Book II. 83).

The lending and the borrowing powers are governed by the Loan Corporations Act, R.S.O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Provincial Building and Loan Association of Toronto, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is in the Temple Building in the City of Toronto, in the Province of Ontario.

The Board is constituted of five directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Thomas Crawford	President	Toronto, Ont.	10th Febu'ry, 1897.	9th March, 1898.
John Dunn	Vice-President	" "	"	"
Wm. Galbraith	Director	Belleville, "	"	"
E. C. Davies	Director	Toronto, "	"	"
Columbus Egleson	Director	Ottawa, "	18th Nov., 1897.	"
E. C. Davies	Manager	Toronto, "	3rd Nov., "	
Andrew Allan	Secretary	" "	15th March, "	

A. Permanent capital stock: Total amount authorized, $5,000,000; total amount subscribed, $58,250, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value.	—		
		$	$ c.	$ c.	$ c.
1. Fully paid	519½	100	51,950 00	51,950 00	....
2. Prepaid	63	100	6,300 00	3,175 00	3,125 00
Totals	582½	.....	58,250 00	55,125 00	3,125 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

B. Terminating or withdrawable stock : Total amount subscribed, $2,010,550, made up as follows :—

4,845 shares "prepaid" stock (other than above) at $100 per share, $484,500 on which there has been paid in $242,660 19 ; 15,260½ shares instalment stock (payable by fixed periodical payments) at $100 per share, $1,526,050 on which there has been paid in $138,295.83 ; total number of shares, 20,105½, subscribed by 2,659 shareholders, who have paid thereon the total of $380,956.02.

SCHEDULE B.

	repaid.		Instalment.		Total.
	No.	Amount.	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$ c.		$ c.	$ c.
Number and amount in force 31st Dec., 1896	3,439	173,117 81	10,798¼	89,479 48	262,597 29
" issued during 1897.....	1,450	62,687 07	5,297¼	51,268 28	113,955 35
Gross total in force at any time in 1897	4,889	235,804 88	16,095½	140,747 76	376,552 64
Deduct as follows:—	No. of shares.	Amount.			
		$ c.			
Withdrawn and paid off during 1897.	879	17,935 65	44	2,490 57	835	15,445 08	17,935 65
Forfeited and lapsed during 1897.....	655	2,683 68	.....	.....	.....	2,683 68	2,683 68
Total deduction	534	20,619 33					
Net total remaining in force at 31st Dec., 1897 ..	4,845	233,314 31	15,260½	122,619 00	355,933 31
Total amount distributed or credited in 1897:—					
(1) As interest.	.....	9,345 88	.....	15,676 83	.....
Rate of such interest, per cent. per annum.	5%	.....	13%	.....	.....
(2) As dividends out of profits.....	.....	13,020 35	.....	.....	.....
Rate or rates per cent of such dividends	6%	.....	.....	.....	.....

Balance Sheet as at 31st December, 1897.

Capital and Liabilities.

Dr.

Item No.		$ c.	$ c.
	Capital (Liabilities to Stockholders or Shareholders.)		
	A.—*Permanent Capital Stock or Shares.*		
1.	(*a*) Permanent capital A., fully called: Total called, $51,940; total paid thereon	51,950 00	
2.	(*b*) Permanent capital B., 25% called: Total called, $ . . . . ; total paid thereon	3,175 00	
6.	(*f*) Reserve fund in respect of (1), (2) or (3)	248 62	
7.	(*g*) Contingent fund in respect of (1), (2) or (3)	2,511 87	
			57,885 49
	B.—*Terminating Capital Stock or Shares.*		
17.	(*d*) Prepaid stock: total in force 4,845 shares at $50 payment per share, on which has been paid	233,314 31	
18.	(*e*) Profits or accrued interest on (17) credited or appropriated but not yet paid	9,345 88	
20.	(*g*) Instalment stock: total issue now in force 15,260½ shares at 30c, 60c., $1.00 and $1 25 per month per share of $100 on which has been paid	122,619 00	
21	(*h*) Profits or accrued interest on (20) credited or appropriated but not paid out	15,676 83	
			380,956 02
			438,841 51
	Liabilities to the Public.		
37.	Owing to banks (including interest due or accrued)		7,133 56
	Total actual liabilities		445,975 07

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing		25,235 58
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land		393,507 82
C.—*Debts not above enumerated for which the Corporation Holds Securities as follows:*		
21. (*i*) Debts secured by terminating stock or shares of the Corporation	7,624 00	
22. (*j*) Agents' balances secured by bonds	902 51	
		8,526 51
E.—*Cash.*		
31. (*a*) On hand		4,021 51
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Licenses—permanent	700 00	
38. (*b*) Interest and premiums occurring on loans to 31st December	7,787 85	
39. (*c*) Office furniture, stationery and supplies	773 04	
40. (*d*) Withdrawal suspense account	4,963 34	
41. (*e*) Sundry accounts	459 42	
		14,683 65
Total of assets owned beneficially by Corporation		445,975 07

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account.		Total. (Column 4.)
		Terminating capital. (Column 2.)	Permanent capital, including reserve. (Column 3.)	
I.—Received by the Corporation for its own use.	c.	$ c.	$ c.	$ c.
Item No. A.—*Balances from 31st December, 1896.*				
1. (*a*) Cash (not already shown under (1)):				
2. (i) On hand				248 93
B.—*Sums Received Wholly or Partly on Capital Stock.*				
4. (*a*) Calls on permanent capital	2,850 10		43,978 89	46,828 99
7. (*d*) Sales of prepaid building society stock	7,381 70	63,336 96		70,718 66
8. (*e*) Dues on instalment building society stock	11,702 75	54,052 63		65,755 38
C.—*Receipts on Account of Investments, Loans or Debts.*				
(*a*) On Mortgages of Realty :				
10. (i) Principal		19,598 23		19,598 23
11. (ii) Interest and premiums	38,053 70			38,053 70
(*b*) On other securities :				
12. (i) Principal stock loans		2,377 00		2,377 00
D.—*Receipts from Real Estate Owned Beneficially by Corporation.*				
17. (*b*) Rent	1,212 27			1,212 27
E.—*Miscellaneous.*				
19. (*b*) Transfer and withdrawal fees	247 00			247 00
20. (*c*) Membership or entry fees (being income of corporation)	5,636 50			5,636 50
21. (*d*) Fines	906 20			906 20
F.—*Borrowed Money.*				
26. (*b*) Borrowed by taking deposits		7,133 56		7,133 56
G.—*Receipts from other sources, viz.*				
30. (*a*) Sundry		993 72		993 72
(*b*) "	88 18			88 18
Totals	68,078 40	147,492 10	43,978 89	259,798 32

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4.)
I.—Expended on Corporation Account.			
	$ c.	$ c.	$ c.
A.—*Sums Loaned or Invested on Capital Account.*			
Item No.			
1. (*a*) Loaned on Mortgages of Realty	.....	133,227 74	133,227 74
(*b*) Loaned or invested in other securities, viz.:			
2. i) Stock loans	.....	6,070 00	6,070 00
B.—*Expended on Stock Account.*			
8. Dividends paid on permanent stock	2,653 85	.....	2,653 85
9. Dividends paid on terminating stock. (*Extend into column 1*)	13,020 35	.....	13,020 35
11. Paid for terminating stock withdrawn	.....	17,935 65	17,935 65
C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*			
18. (*a*) Bank account (principal, $55,078.11; interest $1,210 02)	1,210 02	55,078 11	56,288 13
19. (*b*) Deposits: Principal ..... ; Interest	.....	759 07	759 07
D.—*Management Expenses (other than foregoing).*			
25. (*a*) Salaries and fees	6,493 24	.....	6,493 24
26. (*b*) Commission or brokerage	10,346 31	.....	10,346 31
27. (*c*) Advances to agents	.....	16 57	16 57
28. (*d*) Stationery, postage, printing, advertising, telegrams, etc	2,575 32	.....	2,575 32
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	684 20	.....	684 20
32. (*h*) Collections and exchange	4,547 93	.....	4,547 93
E.—*Other Expenditures, viz.:*			
33. (*a*) Discount on advance payments	72 52	.....	72 52
34. (*b*) Withdrawable suspense account	337 13	.....	337 13
35. (*c*) Sundries, $502.00 and $246.80	748.80	.....	748 80
F.—*Balance.*			
37. (*a*) Cash on hand	.....	.....	4,021 51
Totals	42,689 67	213,087 14	259,798 32

Miscellaneous Statement for the Year Ending 31st December 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of debenture issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898. None.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits. None ; on debentures, none ; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 10⅝% ; on stock loans, 10⅝%.	
7. Of the mortgages held by the Corporation $124,975.00 is on realty situate in Ontario, and $268,532.00 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897, No., 28 ; amount, $25,235.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, No., 25 ; amount, $25,000.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively ? Manager, $3,000 ; secretary, $2,500 ; book-keeper, $2,000.	
13. When were the accounts of the Corporation last audited ? 18th February, 1898.	
14. Names and address of the auditors respectively for 1897 and 1898 : Harry Vigeon, F.C.A., Toronto, Ont. ; John Rogerson, Barrie, Ont.	

THE RELIANCE LOAN AND SAVINGS COMPANY OF ONTARIO.

Head Office, Toronto, Ontario.

Incorporated under the Building Societies' Act (R. S. O. 1887, c. 169) by declaration filed with the Clerk of the Peace for the County of York, on the 2nd March, 1893. (Decl. Book II, 95.) The original corporate name was "The Excelsior Loan and Savings Union," which name was by Order-in-Council of Ontario, 24th June, 1895, changed to "The Reliance Loan and Savings Company of Ontario." (*Ibid.*)

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of The Reliance Loan and Savings Company of Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 84 King street east, in the City of Toronto, in the Province of Ontario.

The Board is constituted of six directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Hon. John Dryden	President	Toronto	21st February, 1898.	20th February, 1899.
James Gunn	Vice-President	"	"	"
David Kemp	Director	"	"	"
Rev'd G. I. Taylor	Director	"	"	"
Dr. R. T. Sheill	Director	"	"	"
Alfred Macdougall	Director	"	"	"
John Blacklock	Manager	"		
Herbert Waddington	Secretary	"		

A. Permanent capital stock: total amount authorized, not fixed; total amount subscribed, $166,700, as more particularly set out in Schedule A hereto.

Schedule A.

Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st Deember, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	—		
		$ c.	$ c.	$ c.	$ c.
1. Fully paid	1,667	100 00	166,700 00	166,575 00	125 00
Totals	1,667	100 00	166,700 00	166,575 00	125 00

List of Shareholders as at 31st December, 1897.

(Not printed.)

B. Terminating or withdrawable stock: total amount subscribed, $1,910,000 made up as follows:

714 shares "prepaid" stock (other than above) at $100 per share. $71,400, on which there has been paid in $41,975.95; 18,386 shares instalment stock (payable at fixed periodical payments) at $100 per share, $8,386 00, on which there has been paid in $41,085.19. Total number of shares 19,100, subscribed by 2,815 shareholders, who have paid thereon the total of $83,061.14.

SCHEDULE B.

	Prepaid.		Instalment.		Total.
	No.	Amount.	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$ c.		$	$
Number and amount in force at 31st December, 1896	135	13,500 00	8,436	843,600	857,100
" issued during 1897	579	57,900 00	9,989	998,900	1,056,800
	714	71,400 00	18,425	1,842,500	1,913,900
Deduct as follows: (No. of shares / Amount)					
Withdrawn and paid off during 1897	39	$ 3,900			
Total deduction			39	3,900	3,900
Net total remaining in force at 31st December, 1897	714	71,400 00	18,386	1,838,600	1,910,000
Total amount distributed or credited in 1897:—					
(2) As dividends out of profits		2,110 99		1,469 45	
Rate or rates per cent. of such dividends	8%		9%		

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (a) Permanent capital stock fully called: Total called, $166,700; total paid thereon		166,575 00
B.—*Terminating Capital Stock or Shares.*		
17. (d) Prepaid stock: total in force 714 shares at $100 per share, on which has been paid	41,975 95	
20. (g) Instalment stock: total issue now in force 18,386 shares at $100 per share $1,838,600, on which has been paid	41,085 19	83,061 14
C.—*Liabilities to Stockholders or Shareholders other than as already shown under A or B, viz.:*		
24. Interest paid in advance	460 41	
25. Reserve fund	4,062 43	
26. Expense fund	1,175 93	5,698 77
LIABILITIES TO THE PUBLIC.—*None.*		
Total actual liabilities		255 334 91

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	230,755 02	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	501 65	231,256 67
C.—*Debts not above Enumerated for which the Corporation Holds Securities as Follows:*		
20 (*h*) Debts secured only by permanent stock or shares of the Corporation	200 00	
21. (*i*) Debts secured only by terminating stock or shares of the Corporation	1,469 56	
22. (*j*) Agents balances secured by bonds	557 30	2,226 86
E.—*Cash.*		
31. (*a*) On hand	46 00	
32 (*b*) In bank	19,629 88	19,675 88
F.—*Assets not here nbefore mentioned.*		
37. (*a*) Provincial licenses	325 50	
38. (*b*) Charter outlay	1,500 00	
39. (*c*) Office furniture	350 00	2,175 50
Total of assets owned beneficially by Corporation		255,334 91

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account.		Total. (Column 4)
		Terminating capital. (Column 2.)	Permanent capital, including reserves. (Column 3.)	
I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.	$ c.
A.—*Balances from 31st December, 1896.*				
Item No. (b) Cash (not already shown under (1) :—				
2. (i) On hand	50 63			
3. (ii) In bank	2,189 24			2,239 87
B.—*Sums Received Wholly or Partly on Capital Stock.*				
4. (a) Calls on permanent capital stock			136,558 50	136,558 50
7. (d) Sales of prepaid building society stock		38,788 24		
8. (e) Dues on instalment building society stock		33,969 48		72,757 72
C.—*Receipts on Account of Investments, Loans or Debts.*				
(a) On Mortgages of Realty :—				
10. (i) Principal	1,197 51			
11. (ii) Interest	9,481 83			10,679 34
G.—*Receipts from other Sources, viz.* :				
30. (a) Transfer fees	47 00			
(b) Expense fund, less amount retained by agents as commission	13,795 12			13,842 12
Totals	26,761 33	72,757 72	136,558 50	236,077 55

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4.)
I.—Expended on Corporation Account.			
	$ c.	$ c.	$ c.
A.—Sums Loaned or invested on Capital Account.			
Item No.			
1. (*a*) Loaned on Mortgages of Realty	197,080 84		
(*b*) Loaned or invested in other securities, viz.:			
2. (i) Shareholders on their stock	1,028 43		
			198,109 27
B.—Expended on Stock Account.			
8. Dividends paid on permanent stock	3,291 19		
9. Dividends paid on terminating stock	1,223 33		
10. Interest paid on terminating stock	36 15		
			4,550 67
11. Paid for terminating stock withdrawn		430 35	430 35
D.—Management Expenses (other than foregoing).			
25. (*a*) Salaries and fees	3,945 64		
26. (*b*) Commission or brokerage	1,995 11		
27. (*c*) Advances to agents	328 24		
28. (*d*) Stationery, postage, printing and advertising	1,906 83		
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	517 01		
32. (*h*) Insurances or taxes advanced on property mortgaged to the corporation	57 45		
			8,750 28
E.—Other Expenditure, viz.:			
33. (*a*) Repaid advances by directors	2,900 00		
34. (*b*) Licenses	435 00		
35. (*c*) Interest	185 20		
36. (*d*) Sundry accounts	150 50		
Office furniture	214 10		
Office expenses	676 30		
			4,561 10
F.—Balance.			
37. (*a*) Cash on hand	46 00		
(*b*) Cash in banks	19,629 88		
			19,675 88
Totals	235,647 20	430 35	236,077 55

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of Debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of Debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898. None.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, none ; on debentures, none ; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 7 4-5, 8 2-5 and 9 %.	
7. Of the mortgages held by the Corporation $103,723.37 is on realty situate in Ontario, and $127,031.65 is on realty situate elsewhere.	
10. Aggregate market value of the land mortgaged to the Corporation, $473,290 50.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager and Secretary, $3,000 each ; Assistant Secretary and Clerk $1,000 each.	
13. When were the accounts of the Corporation last audited ? Monthly, during year 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). W. H. Cross, Toronto, Ont.; S. J. Stammers, Toronto, Ont.	

THE SONS OF ENGLAND BUILDING, LOAN AND SAVINGS ASSOCIATION.

Head Office, Toronto, Ontario.

Incorporated under the Building Societies' Act (R.S.O. 1887, c. 169) by declaration filed in the office of the Clerk of the Peace for the County of York on the 24th June, 1889. (Decl. Book 11, 67.)

The lending and the borrowing powers are governed by the Loan Corporations Act, R S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Sons of England Building, Loan and Savings Association of Toronto, at the 30th June, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 17 Yonge Street Arcade, in the City of Toronto, in the Province of Ontario.

The Board is constituted of nine directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
John Aldridge	President	Toronto	23rd July, 1897	8th July, 1898.
James Pollitt	Vice-President	"	" 1897	" 1898.
George Clatworthy	Director.	"	" 1897	" 1898.
Charles Reeve	Director	"	" 1897	" 1898.
Alfred W. Harris	Director	"	" 1897	" 1898.
William Beers	Director	"	" 1897	" 1898.
John F. Race	Director	"	" 1897	" 1898.
Thomas N. Hopkins	Director.	"	" 1897	" 1898.
George Clay	Manager-Sec'y	"	" 1897	" 1898.
John W. Carter	Treasurer	"	" 1897	" 1898

A. Permanent capital stock : total amount authorized, $100,000 ; total amount subscribed, none, as more particularly set out in Schedule A hereto.

B. Terminating or withdrawable stock : total amount subscribed, $28,100, made up as follows :—

Sixteen shares fully paid stock at $100 per share, $1,600, on which there has been paid in $1,600 ; 265 shares instalment stock (payable by fixed periodical payments) at $100 per share, $26,500, on which there has been paid in $6,046 98. Total number of shares, 281, subscribed by fifty shareholders, who have paid thereon the total of $7,646.98.

SCHEDULE B.

	Fully paid.		Instalment.		Total.
	No.	Amount.	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$		$	$
Number and amount in force at 30th June, 1896	23	2,300 00	261	26,100 00	28,400 00
" issued during 1897	....	.....	35	3,500 00	3,500 00
Totals	23	2,300 00	296	29,600 00	31,900 00
Deduct as follows:	No. of shares.	Amount.			
		$			
Withdrawn and paid off during 1897	31	3,100 00			
Retired by Corporation during 1897	7	700 00	7	700 00	31	3,100 00	3,800 00
Total deduction	38	3,800 00			
Net total remaining in force at 30th June, 1897			16	1,660 00	265	26,500 00	28,100 00
Total amount distributed or credited in 1897:—							
(1) As interest			....	130 74			
Rate of such interest, per cent. per annum			....	6%			
(2) As dividends out of profits added			....	.....		323 05	
Rate or rates per cent. of such dividends				.....		6%	

BALANCE SHEET AS AT 30TH JUNE, 1897.

Capital and Liabilities.

DR.

	$ cts.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).	
A.—Terminating Capital Stock or Shares.	
Item No.	
14. (*a*) Fully paid stock: total in force, 16 shares at $100 per share	1,600 00
20. (*g*) Instalment stock: total issue now in force, 265 shares at $100 per share, $26,500, on which has been paid	6,046 98
22. (*i*) Profits or accrued interest on (20) not credited or appropriated	446 14
24. Reserve fund	50 00
Total actual liabilities	8,143 12

BALANCE SHEET AS AT 30TH JUNE, 1897.

CR.

	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.	
B.—*Debts Secured by Mortgages of Land.*	
9. (*a*) Debts (other than item 10) secured by mortgages of land	7,900 00
C.—*Debts not above enumerated for which the Corporation Holds Securities as follows.*	
21. (*i*) Debts secured only by terminating stock or shares of the Corporation	100 00
E.—*Cash.*	
32. (*b*) In bank	101 15
F.—*Assets not Hereinbefore Mentioned.*	
37. (*a*) Insurance, etc., paid	41 97
Total of assets owned beneficially by Corporation	8,143 12

Cash Account.

Receipts for the year ending 30th June, 1897.

—	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4.)
I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.
A.—*Balances from 30th June, 1896.*			
Item No. 3. (ii) In bank	277 08	.....	277 08
B.—*Sums received Wholly or Partly on Capital Stock.*			
8. (*c*) Dues on instalment building society stock	.....	933 86	933 86
C.—*Receipts on account of investments, loans or debts.*			
(*a*) On Mortgages of Realty :—			
11. (ii) Interest	348 62	.....	348 62
(*b*) On other securities :—			
12. (i) Principal	.....	625 00	625 00
(*c*) Unsecured debts :—			
14. (i) Principal	16 34	.....	16 34
E.—*Miscellaneous.*			
19. (*b*) Premium or bonus on loans	124 12	.....	124 12
21. (*d*) Fines	4 10	.....	4 10
G.—*Receipts from other sources, viz.* :			
30. (*a*) Expense fund	105 29	.....	105 29
(*b*) Application fees	23 50	.....	23 50
Totals	899 05	1,558 86	2,457 91

Cash Account.

Expenditure for the year ending 30th June, 1897.

—	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4.)
	$ c.	$ c.	$ c.
I.—Expended on Corporation Account.			
A.—*Sums Loaned or Invested on Capital Account.*			
Item No. 1. (*a*) Loaned on Mortgages of Realty			430 00
B.—*Expended on Stock Account.*			
10. Interest paid on terminating stock	130 74		130 74
11. Paid for terminating stock withdrawn		1,650 41	1,650 41
D.—*Management Expenses (other than foregoing).*			
25. (*a*) Salaries and fees	55 00		
26. (*b*) Commission or brokerage	23 50		
28. (*d*) Stationery, postage, printing and advertising	19 20		
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	9 00		
31. (*g*) Travelling expenses	10 00		116 70
E.—*Other Expenditures, viz.:*			
33. (*a*) Advances for taxes, etc	28 91		28 91
F.—*Balance.*			
(*b*) Cash in bank	101 15		101 15
Totals	377 50	1,650 41	2,457 91

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 30TH JUNE, 1897.

	$ c.
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 7%; on other securities, 8%.	
7. Of the mortgages held by the Corporation, $7,900 is on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897, none.	
13. When were the accounts of the Corporation last audited? At 2nd July, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed). John Hall, Toronto; E. C. Davenport, Toronto.	

THE STANDARD LOAN COMPANY.

Head Office, Toronto, Ontario.

Incorporated under the Building Societies' Act (Consol. Stat. U. C. chap. 53), by declaration filed with the Clerk of the Peace for the County of Wellington, on 14th February, 1873. Decl. Book II., 133.) The original corporate name was "The Orangeville Building and Loan Association," which name was by Order-in-Council of Ontario, dated 19th May, 1898, changed to The Standard Loan Company. By the same Order-in-Council the head office was changed from Orangeville to Toronto.

The lending and borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the above Corporation at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The Board is constituted of five directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
T. P. Coffee	President	Toronto	February, 1897	February, 1898.
J. R. Stratton	Vice-President	Peterborough	"	"
W. E. Buckingham	Director	Guelph	"	"
F. M. Holland	Director	Toronto	"	"
F. C. Coffee	Director	"	"	"
F. M. Holland	Secretary	"		

A. Permanent capital stock: total amount authorized, none; total amount subscribed, none, as more particularly set out in Schedule A hereto.

B. Terminating or withdrawable stock: Total amount subscribed, $25,050, made up as follows:—

501 shares instalment stock (payable by fixed periodical payments) at $50 per share $25,050, on which there has been paid in $14,268.18; total number shares 671, subscribed by shareholders, who have paid thereon the total of $14,268.18.

SCHEDULE B.

	Instalment.		Total.
	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$	$
Number and amount in force at 31st December, 1896	671	33,550	.....
" issued during 1897	.....	.....	.....
Gross total in force at any time in 1897	671	33,550	33,550
Deduct as follows: (No. of shares. / Amount.)			
Retired by Corporation during 1897 — 170 / $ 8,500	170	8,500	8,500
Total deduction	.....	.....	.....
Net total remaining in force at 31st December, 1897	501	25,050	25,050

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. B.—*Terminating Capital Stock or Shares.*		
20. (*g*) Instalment stock: Total issue now in force 501 shares at $ per share of $50, on which has been paid	14,268 18	
22. (*i*) Profits or accrued interest on (20) not credited or appropriated	103 52	
Total actual liabilities	.....	14,371 70

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing		2,633 80
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	11,384 46	
11. (*c*) Interest due or accrued on items 9 and 10 not included therein	249 92	
		11,634 38
E.—*Cash.*		
32. (*b*) In bank		103 52
Total of assets owned beneficially by Corporation		14,371 70

Cash Account.

Receipts for the year ending 31st December, 1897

		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I.—Received by the Corporation for its Own use.	$ c.	$ c.
Item No.	A.—*Balances from 31st December, 1896.*		
1.	(*b*) Cash (not already shown under (1)):		
3.	(ii) In bank	103 52	103 52
	C.—*Receipts on Account of Investments, Loans or Debts.*		
	(*a*) On Mortgages of Realty :—		
10.	(i) Principal		6,697 35
11.	(ii) Interest	1,112 90	1,112 90
	(*b*) On other securities :—		
12.	(i) Principal		100 00
13.	(ii) Interest or dividends	2 71	2 71
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*		
16.	(*a*) Sales (not included in any of foregoing items)		486 73
	Totals		8,503 21

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital Column 2.	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c.	$ c.
B.—*Expended on Stock Account.*			
Item No. 14. Paid for terminating stock retired	1,594 80	6,731 82	8,326 62
E.—*Other Expenditures, viz.:*			
32. (*h*) Insurances or taxes advanced on property mortgaged to the Corporation	73 07	.....	73 07
F.—*Balance.*			
(*b*) Cash in bank	.....	.....	103 52
Totals	.....	.....	8,503 21

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898. None.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits and debentures, none; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897, on Mortgages of Realty, 6%; on other securities, none.	
7. Of the mortgages held by the Corporation, all are on realty situate in Ontario.....	11,384 46
8. Loans written off or transferred to real estate account during 1897. None.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No., none; amount, none.	
10. Aggregate market value of the land mortgaged to the Corporation, $18,000.	
11. How often are the securities held by the Corporation valued? Yearly.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? None.	

THE STRATFORD BUILDING AND SAVINGS SOCIETY.

Head Office, Stratford, Ont.

Incorporated under the Building Societies Act (R.S.O. 1887, c. 169) by declaration filed with the Clerk of the Peace for the County of Perth on the 23rd August, 1889. (Decl. Book L., 19.)

The lending and the borrowing powers are governed by the Loan Corporations Act, R.S O. 1897, c. 205.

Annual Statement

Of the condition and affairs of The Stratford Building and Savings Society of Stratford, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is on Downie street, in the City of Stratford, in the Province of Ontario.

The Board is constituted of nine directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Michael F. Goodwin	President	Stratford	5th Nov., 1897	4th Nov., 1898
Charles Packert	Vice-President	"	"	"
N. A. Bosworth	Director	"	"	"
John Brown	Director	"	"	"
Joseph Baxter	Director	"	"	"
C. F. Neild	Director	"	"	"
James Barker	Director	"	"	"
J. P. Mabee	Director	"	"	"
H. G. Hopkirk	Director	London	"	"
D. B. Burritt	Manager Secretary	Stratford	21st Oct., 1889	

A. Permanent capital stock: total amount authorized, not fixed; total amount subscribed, $8,500, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a) Fixed and permanent capital stock created by virtue of Building Society Acts.

Description.	Total amount issued and subsisting at 31st December, 1897.			Total amount of actual payments thereon.	Total amount unpaid and constituting an asset of the Corporation.
	No. of shares.	Par value of shares.	—		
		$	$ c.	$ c.	$ c.
1. Fully paid	38	100	3,800 00	3,800 00	.....
Instalment (payable by fixed periodical payments, and still in process of payment).	47	100	4,700 00	270 60	4,429 40
Totals	85	.....	8,500 00	4,070 60	4,429 40

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

B. Terminating or withdrawable stock: total amount subscribed, $171,800, made up as follows:

80 shares fully paid stock at $200 per share, $16,000, on which there has been paid in $16,000.00; 779 shares instalment stock (payable by fixed periodical payments) at $200 per share, $155,800, on which there has been paid in $51,732.81; total number of shares 859, subscribed by 203 shareholders, who have paid thereon the total of $67,732.81.

SCHEDULE B.

	Fully paid.		Instalment.		Total.
	No.	Amount.	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.		$		$	$
Number and amount in force at 31st Dec., 1896	44	8,800	820	164,000	172,800 00
" issued during 1897.....	55	11,000	142	28,400	39,400 00
Gross total in force at any time in 1897.....	99	19,800	962	192,400	212,200 00
Deduct as follows: (No. of shares. / Amount.)					
Withdrawn and paid off during 1897 .... 193 / $ 38,600	15	3,000	178	35,600	38,600 00
Converted into permanent stock during 1897 ..... 9 / 1,800	4	800	5	1,000	1,800
Total deduction . 202 / 40,400	19	3,800	183	36,600	40,400 00
Net total remaining in force at 31st Dec., 1897.	80	16,000	779	155,800	171,800 0
Total amount distributed or credited in 1897:					
(1) As interest	.....	48 71	.....	305 63	354 34
Rate of such interest, per cent. per annum, 5	.....	5%	.....	.....	.....
(2) As dividends out of profits	.....	706 62	.....	2,508 36	3,214 98
Rate or rates per cent. of such dividends, 5 and 6 per cent.					

Balance Sheet as at 31st December, 1897.

Capital and Liabilities.

Dr.

Item No.		$ c.	$ c.
	Capital (Liabilities to Stockholders or Shareholders).		
	A.—*Permanent Capital Stock or Shares.*		
8.	(*h*) Instalment permanent stock (payable by fixed periodical payments): total subscribed $8,500, on which has been paid....	4,070 60	
	B.—*Terminating Capital Stock or Shares.*		
14.	(*a*) Fully paid stock: total in force, 80 shares at $200 per share....	16,000 00	
15.	(*b*) Profits or accrued interest on (14) credited or appropriated but not yet paid.....	25 40	
20.	(*g*) Instalment stock: total issue now in force 779 shares at $200 per share, $155,800, on which has been paid	44,159 32	
21.	(*h*) Profits or accrued interest on (20) credited or appropriated but not yet paid.....	7,573 49	
23.	(*j*) Instalments or premiums paid on (20) in advance $6,394 22 included in (20).		
	C.—*Liabilities to Stockholders or Shareholders other than as already shown under A or B, viz.*		
24.	Balance at credit of profit and loss account	2,780 55	
25.	Interest accrued	513 55	
26.	Interest, premiums, etc., received since books were last closed.....	941 00	76,063 91
	Liabilities to the Public.		
27.	Deposits	1,580 64	
28.	Interest on deposits due, accrued or capitalized	36 60	
37.	Owing to banks (including interest due or accrued).....	4,000 00	
39.	Due on loans in process of completion or to pay assumed mortgages.	172 23	
40.	Other liabilities to the public, viz.:—		
41.	(a) Petty accounts	12 30	5,801 77
	Total actual liabilities	.....	81,865 68

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c
I.—Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	76,665 00	
10. (*b*) Debts secured by mortgaged land held for sale	805 69	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	513 55	
12. (*d*) Of the debts mentioned in items 9, 10 and 11 the sum of $5,000 is due by directors or officers of the Corporation. (Not extended).		77,984 24
C.—*Debts not above enumerated for which the Corporation holds securities as follows:*		
21. (*i*) Debts secured only by terminating stock or shares of the Corporation	2,487 00	2,487 00
E.—*Cash.*		
31. (*a*) On hand	195 81	
32. (*b*) In banks	67 92	263 73
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture	229 55	
38 (*b*) Sundry arrears of interest and fines	536 13	
39. (*c*) Insurance premiums advanced	10 18	
40. (*d*) Preliminary expense account	141 16	
41 (*e*) Expenses of management since last closing of books	213 69	1,130 71
Total of assets owned beneficially by Corporation		81,865 68

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Amount carried to capital account. Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.	$ c.
Item No. A.—*Balances from 31st December, 1896.*				
(*b*) Cash (not already shown under (1)):				
2. (i) On hand				118 15
3. (ii) In bank				412 04
B.—*Sums received Wholly or Partly on Capital Stock.*				
4. (*b*) Calls on permanent capital stock			890 57	890 57
6. (*c*) Sales of fully paid building society stock		7,400 00		
8. (*e*) Dues on instalment building society stock		12,440 36		
				19,840 36
C.—*Receipts on Account of Investments, Loans or Debts.*				
(*a*) On Mortgages of Realty:—				
10. (i) Principal				14,122 94
11. (ii) Interest	4,300 90			4,300 90
(*b*) On other Securities:—				
12. (i) Principal				5,719 00
13. (ii) Interest or Dividends	285 00			285 00
E.—*Miscellaneous.*				
20. (*c*) Membership or entry fees (being income of corporation)	49 25			
21. (*d*) Fines	39 96			
				89 21
F.—*Borrowed Money.*				
25. (*a*) Bank or other advances, discounts or overdrafts				13,600 00
26. (*b*) Borrowed by taking deposits				7,113 78
G.—*Receipts from other sources, viz.:*				
30. (*a*) Discounts on withdrawals	207 80			
(*b*) Rent use of office	100 00			
(*c*) Rebate on bank account	4 60			
				312 40
(*d*) Sundries				265 81
(*d*) Expenses on loans				100 95
Totals	4,987 51	19,840 36	890 57	67,170 61

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c.	c.
A.—*Sums Loaned or Invested on Capital Account.*			
Item No.			
1. (*a*) Loaned on Mortgages of Realty			25,003 57
(*b*) Loaned or invested in other securities, viz.:			
2. (i) Terminating stock loans			4,132 00
B.—*Expended on Stock Account*			
8. Dividends paid on permanent stock. (*Extend into column 1*)	156 79		
9. Dividends paid on terminating stock (*Extend into column 1*)	681 22		
10. Interest paid on terminating stock. (*Extend into column 1*)	354 34		1,192 35
11. Paid for terminating stock withdrawn		12,599 33	
13. Profits paid on (11) and (12). (*Extend as in 11*)		1,488 23	14,087 56
C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*			
18. (*a*) Bank account (principal and interest)			15,352 96
19. (*b*) Deposits: Principal, $5,994.58; interest, $31.41			6,025 99
D.—*Management Expenses (other than foregoing).*			
25. (*a*) Salaries and fees	390 00		
26. (*b*) Commission or brokerage	30 50		
28. (*d*) Stationery, postage, printing and advertising	73 87		
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	326 50		
31. (*g*) Travelling expenses	2 00		822 87
E.—*Other Expenditures, viz.:*			
33. (*a*) Premium on Manager's bond	30 00		
34. (*b*) Registration fee	30 00		60 00
35. (*c*) Expenses on loans			186 88
36. (*d*) Office furniture			42 70
F.—*Balance.*			
37. (*a*) Cash on hand $195 81			
(*b*) Cash in bank 67 92			263 73
Totals	2,075 22	14,087 56	67,170 61

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
3. Amount of other existing obligations of the Corporation which will mature in 1898 ...	4,000 00
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	6,737 00
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 7% ; on other securities, 8%.	
7. Of the mortgages held by the Corporation $77,470.69 is on realty situate in Ontario.	
10. Aggregate market value of the land mortgaged to the Corporation, $120,000.	
11. How often are the securities held by the Corporation valued? Once a year.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager, $5,000.	
13. When were the accounts of the Corporation last audited? To 1st January, 1898.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). J. R. Stuart and R. R. Neild, Stratford.	

THE SUN SAVINGS AND LOAN COMPANY OF ONTARIO.

Head Office, Toronto, Ontario.

Incorporated under the Building Societies Act (R. S. O. 1887, c. 169) by declaration filed with the Clerk of the Peace for the County of York on the 3rd day of May, 1893. (Decl. Book II, 99.) The original corporate name was the Happy Home Building Society, which name was by Order-in-Council of Ontario, 4th August, 1894, changed to the Sun Savings and Loan Company of Ontario. (*Ibid.*)

The lending and the borrowing powers are governed by the Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Sun Savings and Loan Company of Ontario at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 2 Richmond street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of five Directors holding office for one year.

The Directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date.)	Will end (date.)
J. T. Gilmour, M.D.	President	Toronto	1st February, 1897	21st February, 1898
H. Hartley Dewart	Vice-President	"	"	"
Wm. McKenzie	Director	"	"	"
Robert A. Purdon	Director	"	"	"
W. P. Page	Director	"	"	"
W. Pemberton Page	Manager, Secretary	"	"	"

A. Permanent capital stock : total amount authorized, $100,000 ; total amount subscribed, $600, as more particularly set out in Schedule A hereto.

Schedule A.

(a).—*Fixed and permanent capital stock created by virtue of Building Society Acts.*

Description.	No. of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid.
		$	$ c.	$ c.	$ c.
1. Instalment permanent stock	6	100	600 00	150 00	450 00
Totals	6	100	600 00	150 00	450 00

List of Shareholders as at 31st December, 1897.

(Not printed.)

B. Terminating or withdrawable stock : Total amount subscribed, $804,400, made up as follows : 37 shares fully paid stock at $100 per share, $3,700, on which there has been paid in $3,700.09 ; 99 shares " prepaid " stock (other than above) at $100 per share, $99 700, on which there has been paid in $59,400.00 ; 7,010 shares instalment stock (payable by fixed periodical payments) at $100 per share, $701,000, on which there has been paid in $31,583.46. Total number of shares 8,044, subscribed by 1,960 shareholders, who have paid thereon the total of $94,683.46.

SCHEDULE B.

Shares of Terminating or Withdrawable Stock.	Fully paid.		Prepaid.		Instalment.		Total.
	No.	Amount	No.	Amount.	No.	Amount.	
		$		$		$	$
Number and amount in force at 31st Dec., 1896	25	2,500	266	26,600	4,339	433,900	463,000
Number and amount issued during 1897	12	1,200	731	73,100	7,150	715,900	789,300
Gross total in force at any time in 1897	37	3,700	997	99,700	11,489	1,148,900	1,252,300
Deduct as follows:	No. of shares.	Amount					
		$ c.					
Withdrawn and paid off during 1897	27	2,700					
Forfeited and lapsed during 1897	4,321	432,100					
Converted into paid up certificates	131	13,100					
Total deduction	4,479	447,700			4,479	447,900	447,900
Net total remaining in force at 31st Dec., 1897	37	3,700	997	99,700	7,010	701,000	804,400
Total amount distributed or credited in 1897:							
(i) As interest				2,387.02			2,387.02
Rate of such interest, per cent. per annum				6%			

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

Item No.		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
	A.—*Permanent Capital Stock or Shares.*		
8.	(*h*) Instalment permanent stock (payable by fixed periodical payments); Total subscribed, $600: on which has been paid	150 00	150 00
	B.—*Terminating Capital Stock or Shares.*		
14.	(*a*) Fully paid stock: Total in force, 37 shares at $100 per share	3,460 00	
17.	(*d*) Prepaid stock: Total in force, 997 shares at $100 per share, on which has been paid	54,400 00	
18.	(*e*) Profits or accrued interest on (17) credited or appropriated but not yet paid	1,124 48	
20.	(*g*) Instalment stock: Total issue now in force 7,010 shares at $100 per share, $701,000, on which has been paid	13,171 00	
21.	(*i*) Profits or accrued interest on (17) and (20) not credited or appropriated	1,637 88	
	C. *Liabilities to Stockholders or Shareholders other than as already shown under* A *or* B, *viz* :—		
24.	Paid up certificates	1,085 00	
25.	Partial payments	237 00	75,115 36
	LIABILITIES TO THE PUBLIC.—None.		
	Total actual liabilities		75,265 36

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land (including $79.20, being disbursements)	62,129 20	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein.	275 08	62,404 28
C.—*Debts not above enumerated for which the Corporation holds Securities as follows.*		
20. (*h*) Debts secured only by terminating stock or shares of the Corporation.	1,315 70	
22. (*j*) Debts secured by chattel mortgage collateral	270 00	1.585 70
D.—*Unsecured Debts.*		
27. (*a*) Agents' balances.	131 29	131 29
E.—*Cash.*		
32. (*b*) In bank		11,144 09
Total of assets owned beneficially by Corporation		75,265 36

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account.	Amount carried to capital account.		Total.
		Terminating capital.	Permanent capital, including reserve.	
	(Column 1.)	(Column 2.)	(Column 3.)	(Column 4.)
I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.	$ c.
Item No. A.—*Balances from 31st December, 1896.*				
1. (*a*) Capital Account, balance in Trusts Company	.....	5,607 63	.....	5,607 63
(*b*) Cash (not already shown under (1) :—				
3. (ii) In bank	11 11	1,544 65	.....	1,555 76
B.—*Sums Received Wholly or Partly on Capital Account.*				
6. (*c*) Sales of fully paid building society stock	60 00	540 00	150 00	750 00
7. (*d*) Sales of prepaid building society stock.	3,655 00	40,200 00	.....	43,855 00
8. (*e*) Dues on instalment building society stock	7,635 59	13,205 18	.....	20,840 77
C.—*Receipts on Account of Investments, Loans or Debts.*				
(*a*) On Mortgages of Realty :—				
10. (i) Principal	.....	1,762 50	.....	1,762 50
11. (ii) Interest	.....	3,314 36	.....	3,314 36
E.—*Miscellaneous.*				
20. (*c*) Membership or entry fees (being income of Corporation)	.....	54 05	.....	54 05
G.—*Receipts from other sources, viz.*				
30. (*a*) Interest on balance in Trust Co	.....	287 20	.....	287 20
Totals	11,361 70	66,515 57	150 00	78,027 27

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.	Total. (Column 4.)
1.—Expended on Corporation Account.			
A.—*Sums Loaned or Invested on Capital Account.*	$ c.	$ c.	$ c.
Item No. 1. (*a*) Loaned on Mortgages of Realty		49,179 60	49,179 60
(*b*) Loaned or invested in other securities, viz.:			
2. (i) Stock		1,215 70	1,215 70
3. (ii) Disbursements on loans to be repaid		148 77	148 77
B.—*Expended on Stock Account.*			
10. Interest paid on terminating stock, (*Extend into column 1*)	1,585 26		1,585 26
11. Paid for terminating stock withdrawn		213 23	213 23
C.—*Borrowing Money (other than foregoing) or Interest Thereon Paid, viz.:*			
19. (*b*) Advances by directors: Principal, $1,450; interest, $41.38	41 38	1,450 00	1,491 38
Interest, special stock. (Expense fund)	80 25		80 25
D.—*Management Expenses (other than foregoing).*			
25. (*a*) Salaries and fees	3,313 21		
26. (*b*) Commission or brokerage	4,659 22		
27. (*c*) Advances to agents	526 49		
28. (*d*) Stationery, postage, printing and advertising	1,911 79		
29. (*e*) Law costs	61 29		
30. (*f*) Fuel, rent, taxes (other than in 32) rates, lighting, etc	596 88		
31. (*g*) Travelling expenses	274 58		11,343 46
E.—*Other Expenditures, viz.:*			
33. (*a*) Commission to Trust Co.	300 00		
34. (*b*) Directors' and auditors' fees	875 00		
35. (*c*) Discount, exchange, bonds, etc	318 46		
36. (*d*) Furniture and fixtures	27 70		1,521 16
F.—*Balance.*			
37. (*a*) Cash on hand			
(*b*) Cash in Trusts Co.		11,144 09	11,144 09
Cash in bank	104 37		104 37
Totals	14,675 88	63,351 39	78,027 27

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898. None.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 11%.	
7. Of the mortgages held by the Corporation all are on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897. None.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No, 2; amount	750 00
10. Aggregate market value of land mortgaged to the Corporation, $93,000 estimated.	
11. How often are the securities held by the Corporation valued? Company only in operation two years.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Manager, $2,000; accountant, $1,000.	
13. When were the accounts of the Corporation last audited? 31st December, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed)? James F. Lawson, Toronto, Ont.; Samuel P. Russell, Toronto, Ont.	

THE YORK COUNTY LOAN AND SAVINGS COMPANY.

Head Office, Toronto, Ontario.

Incorporated under the Building Societies Act (R. S. O. 1887, c. 169), by declaration filed with the Clerk of the Peace for the County of York on the 21st December, 1891. (Decl. Book II., p. 83.)

The lending and the borrowing powers are governed by the Loan Corporations Act, R S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the York County Loan and Savings Company of Toronto, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is in Confederation Life Building in the City of Toronto, in the Province of Ontario.

The Board is constituted of four directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Joseph Phillips.....	President and General Manager	Toronto ..	18th February, 1897	24th February, 1898
A. T. Hunter.....	Vice-President	" ..	"	"
E. J. Burt	Director.....	" ..	"	"
V. Robin	Secretary-Treasurer.	" ..	"	"

B Terminating or withdrawable stock : Total amount subscribed, $3,002,000, made up as follows :

1,583 shares fully paid stock at $100 per share, $158,300, on which there has been paid in $158,300 ; 28,437 shares instalment stock (payable by fixed periodical payments) at $ per share, $2,843,700, on which there has been paid in $193,368.01 ; total number of shares 30,020, subscribed by the shareholders, who have paid thereon the total of $351,668.01.

SCHEDULE B.

			Fully paid.		Instalment.		Total.
			No.	Amount.	No.	Amount.	
SHARES OF TERMINATING OR WITHDRAWABLE STOCK.				$ c.		$ c.	$ c.
Number and amount in force at 31st December, 1896			1,175	117,500 00	.....	127,707 05	245,207 05
" issued during 1897			513	51,300 00	.....	187,224 41	238,524 41
Gross total in force at any time in 1897			1,688	168,800 00	.....	314,931 46	483,731 46
	No. of shares.	Amount.					
		$					
Deduct as follows :							
Withdrawn and paid off during 1897		87,922 66	105	10,500 00	....	77,422 66	87,922 66
Forfeited and lapsed during 1897		44,140 79	.....	.....	.....	44,140 79	44,140 79
Total deduction		132,063 45					
Net total remaining in force at 31st December, 1897			1,583	158,300 00	28,437	193,368 01	351,668 01
Total amount distributed or credited in 1897 :							
(1) As interest			.....	10,701 56	....	.....	.....
Rate of such interest, per cent. per annum 5%.							
(2) As dividends out of profits			.....	6,112 47	.....	.....	.....
Rate or rates per cent. of such dividends 5%.							

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. B.—*Terminating Capital Stock or Shares.*		
14. (*a*) Fully paid stock : Total in force, 1,583 shares at $100 per share	158,300 00	
20. (*g*) Instalment stock : Total issue now in force 28,137 shares at $ per share of $100, on which has been paid	193,368 01	
21. (*h*) Profits or accrued interest on (20) credited or appropriated but not paid out	27,530 32	
C.—*Liabilities to Stockholders or Shareholders other than as already shown under A or B, viz.*		
24. Reserve fund	13,000 00	
25. Contingent fund	32,868 09	
26. Borrowers return of principal	21,967 53	
		447,033 95
LIABILITIES TO THE PUBLIC.		
39. Due on loans in process of completion or to pay assumed mortgages	17,675 97	
40. Other liabilities to the public, viz :		
41. (*a*) Mortgages assumed for members	4,400 00	
		22,075 97
Total actual liabilities		469,109 92

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	390,900 00	
10. (*b*) Debts secured by mortgaged land held for sale	8,136 55	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein.	4,125 99	
		403,162 54
C.—*Debts not above enumerated for which the Corporation Holds Securities as follows:*		
21. (*i*) Debts secured only by terminating stock or shares of the Corporation	22,258 00	
22. (*j*) Insurance, taxes, etc., advanced	3,531 86	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein..	826 74	
		26,616 60
E.—*Cash.*		
31. (*a*) On hand	153 32	
32. (*b*) In bank	30,772 04	
		30,925 36
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Agents' balances	2,323 99	
38. (*b*) Furniture and fixtures (depreciation written off)	6,081 43	
		8,405 42
Total of assets owned beneficially by Corporation		469,109 92

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. (Column 2.)	Total. (Column 4.)
I.—Received by the Corporation for its own use.			
A.—*Balances from 31st December, 1896.*	$ c.	$ cts.	$ cts.
Item No. (*b*) Cash (not already shown under (1)):—			
2. (i) On hand		4,395 70	
3. (ii) In bank		12,339 41	16,735 11
B.—*Sums received wholly or partly on Capital Stock.*			
6. (*c*) Sales of fully paid Building Society stock		51,300 00	51,300 00
8. (*e*) Dues on instalment Building Society stock		187,224 41	187,224 41
C.—*Receipts on Account of Investments, Loans or Debts.*			
(*a*) On Mortgages of Realty:—			
10. (i) Principal		25,813 17	25,813 17
11. (ii) Interest on mortgages and share loans	17,553 71		17,553 71
(*b*) On other securities:—			
12. (i) Principal		14,126 50	14,126 50
E.—*Miscellaneous.*			
18. (*a*) Commission, brokerage (or remuneration as corporate agent, trustee, etc.)	29,522 47		29,522 47
22. (*e*) Forfeitures or lapses, including suspended capital	44,140 79		44,140 79
23. (*f*) Revivals of terminating stock. (*Extend into Column 2*)		9,831 20	9,831 20
G.—*Receipts from Other Sources, viz.:*			
30. (*a*) Accounts receivable	85 52		85 52
Totals	91,302 49	305,030 39	396,332 88

Cash Account.

Expenditure for the year ending 31st December, 1897.

—	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Terminating capital. (Column 2.)	Total. (Column 4.)
	$ c.	$ c.	$ c.
I.—Expended on Corporation Account.			
A.—*Sums Loaned or Invested on Capital Account.*			
Item No.			
1. (*a*) Loaned on Mortgages of Realty		151,360 16	151,360 16
(*b*) Loaned or invested in other securities		22,747 00	22,747 00
(*c*) Insurances or taxes, etc., advanced on property mortgaged to the Corporation		3,234 81	3,234 81
B.—*Expended on Stock Account.*			
9. Dividends paid on terminating stock	6,112 47		6,112 47
10. Interest paid on terminating stock	10,701 56		10,701 56
11. Paid for terminating stock withdrawn		87,922 66	87,922 66
15. Terminating stock forfeited, lapsed or suspended		44,140 79	44,140 79
17. Terminating stock revived. (*Extend into column 1*)	9,831 20		9,831 20
D.—*Management Expenses (other than foregoing).*			
25. (*a*) Salaries and fees	9,218 00		
26. (*b*) Commission or brokerage	5,404 89		
27. (*c*) Advances to agents	3,819 68		
28. (*d*) Stationery, postage, printing and advertising	4,222 52		
29. (*e*) Law costs	795 00		
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	2,192 27		
31. (*g*) Travelling expenses	2,106 55		
			27,758 91
E.—*Other Expenditures, viz.*			
33. (*a*) Furniture	1,597 96		1,597 96
F.—*Balance.*			
37. (*a*) Cash on hand		153 32	
(*b*) Cash in bank		30,772 04	
			30,925 36
Totals	56,002 10	340,330 78	396,332 88

MISCELLANEOUS EXPENDITURE FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 7%; on other securities, 8%.	
7. Of the mortgages held by the Corporation $326,800 is on realty situate in Ontario, and $64,100 is on realty situate elsewhere.....	390,900 00
8. Loans written off or transferred to real estate account	3,400 00
10. Aggregate market value of land mortgaged to the Corporation	781,800 00
11. How often are the securities held by the Corporation valued? Quarterly.	
12. What officers of the Corporation are under bond and for what sum respectively? Treasurer, $11,000; Inspectors, Superintendents and Collectors, $44,985.	
13. When were the accounts of the Corporation last audited? 5th February, 1898.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). Thomas G. Hand, G. F. Harper, Toronto.	

III. LOANING LAND COMPANIES.

ASSETS, LIABILITIES AND MISCELLANEOUS DETAILS.

THE DOVERCOURT LAND, BUILDING AND SAVINGS COMPANY, LIMITED.

Head Office, Toronto.

Incorporated on the 16th December, 1885, by Letters Patent of Ontario, (Lib. 17, No. 115), issued under *The Ontario Joint Stock Companies' Letters Patent Act*, R. S. O. 1877, c. 150.

For the lending powers see statement of the objects in the above instrument.

For the borrowing powers see paragraphs 25 to 28 of the same.

Annual Statement

Of the condition and affairs of The Dovercourt Land, Building and Savings Company, Limited, of Toronto, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 57 Victoria St., in the City of Toronto, in the Province of Ontario.

The Board is constituted of six directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
James Brandon	President	Toronto, Ont	9th Feb'y, 1897	8th Feb'y, 1898.
Harton Walker	Vice-President	"	"	"
W. Walton	Director	"	"	"
A. H. Lightbourn	Director	"	"	"
A. M. Walton	Director	"	"	"
E. T. Lightbourn	Director	"	"	"
James T. Locke	Manager	"	"	"

A. Permanent capital stock: total amount authorized, $500,000; total amount subscribed, $64,550, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(b).—Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or Private Acts.

Description.	No. of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		$	$ c.	$ c.	$ c.
1. Fully called	1,291	50	64,550 00	63,750 00	800 00
Totals	1,291	50	64,550 00	63,750 00	800 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

Dr.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A—*Permanent Capital Stock or Shares.*		
1. (a) Ordinary joint stock capital fully called; total called, $64,550; total paid thereon	63,750 00	
5. (e) Unappropriated profits in respect of (1)	453 86	
6. (f) Reserve fund in respect of (1)	25,000 00	
		89,203 86
LIABILITIES TO THE PUBLIC.		
38. Due on bills payable other than (37) (including interest due or accrued)	1,200 00	
40. Other liabilities to the public, viz.:—		
41. (a) Mortgages payable and accrued interest	7,330 42	
42. (b) Taxes on properties (vacant lands)	1,810 00	
43. (c) Sundry accounts	729 77	
		11,070 19
Total actual liabilities		100,274 05
CONTINGENT LIABILITIES.		
44. Claims against the Corporation not acknowledged as debts, viz.:—		
45. (a) Mortgages and accrued interest		11,789 00
"The above amount is mortgages on sales or purchases of land made some years ago, and which mortgages contain the covenant of this Company to pay. We, however, consider that properties covered by them and collateral security held by us is sufficient to cover all our liability."		
Total contingent liabilities		11,789 00

Balance Sheet as at 31st December, 1897.

Cr.

		$ c.	$ c.
	I.—Assets of which the Corporation is the Beneficial Owner.		
	A.—*Immovable Property Owned Beneficially by Corporation.*		
5.	(*b*) Freehold land (including buildings) other than foregoing, principally vacant lands	42,768 87	42,768 87
	B.—*Debts Secured by Mortgages of Land.*		
9.	(*a*) Debts (other than item 10) secured by mortgages of land, being mortgages and agreements principally for balances on sales of land and due and accrued interest	40,657 23	40,657 23
12.	(*d*) Of the debts mentioned in items 9, 10 and 11 the sum of $869.25, is due by directors or officers of the Corporation. (Not extended).		
	E.—*Cash.*		
31.	(*a*) On hand	17 95	
32.	(*b*) In bank	272 83	
			290 78
	F.—*Assets not hereinbefore mentioned.*		
37.	(*a*) Bills receivable and interest	726 95	
38.	(*b*) Rents due and accrued	208 00	
39.	(*c*) Land and Loan Company's stock fully paid	8,004 00	
40.	(*d*) Land and Loan Company's stock, 80% paid	7,600 00	
41.	(*e*) Sundry accounts	18 22	
			16,557 17
	Total assets owned beneficially by Corporation		100,274 05
	II. Assets not Owned Beneficially by Corporation but for which the Corporation is Accountable.		
	A.—*As Guarantor.*		
	(*a*) Mortgage securities :—		
43.	(i) Principal		
44.	(ii) Interest due and accrued		
	(*b*) Other securities :—		
45.	(i) Principal		
46.	(ii) Interest due and accrued		
	B.—*As Trustee, Representative, Guardian, or Agent (Without Guarantee).*		
	(*a*) Mortgage securities :—	See Note under Contingent Liabilities.	
47.	(i) Principal		
48.	(ii) Interest due and accrued		
	(*b*) Other securities :—		
49.	(i) Principal		
50.	(ii) Interest due and accrued		
51.	(*c*) Unsecured debts		
52.	(*d*) Uninvested Trust funds		
	Total of Assets II		

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)
		$ c.
	I.—Received by the Corporation for its own use.	
	A.—Balances from 31st December, 1896.	
1.	(*b*) Cash (not already shown under (1)) :	
2.	(i) On hand	40 00
3.	(ii) In bank	135 69
	B.—Sums Received Wholly or Partly on Capital Stock.	
4.	(*a*) Calls on joint stock permanent capital on account	50 00
	C.—Receipts on Account of Investments, Loans or Debts.	
	(*a*) On Mortgages of Realty :	
10.	(i) Principal	1,136 84
11.	(ii) Interest	699 67
	D.—Receipts from Real Estate Owned Beneficially by Corporation.	
16.	(*a*) Sales (not included in any of foregoing items)	256 00
17.	(*b*) Rents	200 00
	F.—Borrowed Money.	
29.	(*c*) Bills payable	1,200 00
	G.—Receipts from other Sources, viz.:	
30.	(*a*) Collateral accounts	294 33
	(*b*) Sundry accounts	23 30
	Totals	4,035 86

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.			Amount carried to earnings, maintenance or contingent account. (Column 1.)
	I.—Expended on Corporation Account.		
			$ c.
	A.—Sums Loaned or Invested on Capital Account.		
1.	(*a*) Taxes and charges on mortgages and agreements		258 88
	C.—Borrowed Money (other than foregoing) or Interest thereon paid, viz.:		
19.	(*b*) Mortgages payable		365 00
	D.—Management Expenses (other than foregoing).		
25.	(*a*) Salaries and Fees, 1896 and 1897		800 00
26.	(*b*) Registration of Company		30 00
28.	(*d*) Stationery, Postage, Printing and Advertising and general expenses		87 79
30.	(*f*) Fuel, Rent, Taxes (other than in 32) and rates		176 00
31.	(*g*) Voted to Directors and Auditors at annual meeting, 1897		370 00
32.	(*h*) Sundry accounts		43 00
	E.—Other Expenditures, viz.:		
33.	(*a*) Balance of 10% call on Land and Loan Co. Stock		850 00
34.	(*b*) Bills payable and interest		315 00
35.	(*c*) Bills receivable		240 00
36.	(*d*) Collateral accounts		209 38
	F.—Balance.		
37.	(*a*) Cash on hand	$ 17 95	
	(*b*) Cash in bank	272 83	
			290 78
	Totals		4,035 83

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of Debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of Debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. Bills payable, $1,200 and taxes.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898: Mortgages and agreements largely now due.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, none; on debentures, none; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, about 6%.	
7. Of the mortgages held by the Corporation all are on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897; mortgages, agreements and interest written off	11,267 19
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897, none; amount, none.	
10. Aggregate market value of the land mortgaged to the Corporation? Principally vacant lands as security. Impossible to place cash value owing to condition of real estate market.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? None.	
13. When were the accounts of the Corporation last audited? To 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898, S. E. Townsend, Toronto, Ont.; F. J. Lightbourn, Toronto, Ont.	

THE LAND SECURITY COMPANY.

Head Office, Toronto.

Constating Acts or Instruments.

1873, Special Act of Incorporation, 36 V. c. 128 (O.), under the name of The Toronto House Building Association.

1882. 45 V. c. 80 (O.), changing the corporate name to *The Land Security Company*; increasing capital stock, and amending powers.

1885. 48 V. c. 82 (O.), amending powers.

1889. 52 V. c. 86 (O.), increasing capital stock; authorizing conversion of existing shares into new shares, and amending powers.

1890. 53 V. c. 132 (O.), increasing capital stock to $5,000,000; defining rights of transferee on transmission of shares by death, etc.

1896. 59 V. c. 113 (O.), changing ordinary shares into preference shares; dividing existing shares, etc.

For the lending powers see 48 V. c. 82 (O.), secs. 1, 2, and 52 V. c. 86 (O)., s. 5.

For the borrowing powers see 36 V. c. 128 (O.), s. 5, as amended by 45 V. c. 80 (O.), s. 5, and by 48 V. c. 82 (O.), s 2; and see 59 V. c. 113 (O.), secs. 10 to 13.

Annual Statement

Of the condition and affairs of the Land Security Company of Toronto, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 44-46 Victoria street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of seven directors, holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Robert Jaffray	President	Toronto, Ont..	2nd February, 1897	1st February, 1898.
John Burns	Vice-President ..	"	"	"
Edward Galley.....	Director	"	"	"
Hon. Chancellor J. A. Boyd	Director	"	"	"
Fred. J. Stewart	Director	"	"	"
John C. Copp	Director	"	"	"
James Sadd (deceased)...	Director	.....	.....	.....
Wm. I. Mackenzie	Manager ..... / Secretary	Toronto, Ont..	2nd February, 1897	.....

A. Permanent capital stock: Total amount authorized, $5,000,000; total amount subscribed, $1,382,300, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(b).—Fixed and Permanent Capital Stock created by virtue of Joint Stock Companies' Acts or Private Acts.

Description.	No. of shares.	Par value of shares. *	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		$	$ c.	$ c.	$ c.
1. Partly called	4,117	100	411,700 00	167,042 08	
2. "	5,155	90	463,950 00	212,063 40	
3. "	3,820	80	305,600 00	152,800 00	
4. "	699	70	48,930 00	27,960 00	
5. "	32	60	1,920 00	1,280 00	
6. Preference stock	15 020	10	150,200 00	150,200 00	
Totals	28,843		1,382,300 00	711,345 48	

* As readjusted under special Act, 59 Vic. c. 113 (O).

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Preference joint stock capital fully called: Total called ...; total paid thereon	150,200 00	
2. (*b*) Ordinary joint stock capital, ...% called: Total called ...; total paid thereon	561,145 48	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	93 60	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	130,499 96	
7. (*g*) Contingent fund in respect of (1), (2) or (3)	23,668 17	
		865,607 21
LIABILITIES TO THE PUBLIC.*		
27. Deposits	52,589 57	
28. Interest on deposits, due, or accrued or capitalized	424 08	
29. Debentures issued in Canada	301,286 66	
30. Interest due and accrued on (29)	2,407 69	
31. Debentures issued elsewhere than in Canada	722,505 39	
32. Interest due and accrued on (31)	5,159 14	
		1,084,372 53
Total actual liabilities		1,949,979 74

* Specially secured by instrument bearing date 26th October, 1897, executed betwen the Company and certain Trustees.

Balance Sheet as at 31st December, 1897.

Cr.

		$ c.	$ c.
I. Assets of which the Corporation is the Beneficial Owner.*			
A.—*Immovable Property Owned Beneficially by Corporation.*			
5. (*b*) Freehold land (including buildings) other than foregoing		888,516 49	
6. (*c*) Leasehold land (including buildings) other than foregoing	$373,699 02		
7. (*d*) Less charges thereon	23,539 34		
		350,159 68	
			1,238,676 17
B.—*Debts Secured by Mortgages of Land*			
9. (*a*) Debts (other than item 10) secured by mortgages of land		589,515 92	
10. (*b*) Debts secured by mortgaged land held for sale		14,992 03	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein		12,504 12	
			617,012 07
C.—*Debts not above enumerated for which the Corporation holds Securities as follows:*			
16. (*d*) Debts secured by Loan Corporations' debentures		24,000 00	
20. (*h*) Debts secured only by permanent stock or shares of the Corporation		12,413 78	
22. (*j*) Debts secured by call loans on stocks		53,254 07	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein		2,561 92	
			92,229 77
E.—*Cash.*			
32. (*b*) In banks		2,061 73	2,061 73
Total of assets owned beneficially by Corporation			1,949,979 74

* The above assets are subject to instrument mentioned on page 524 *supra*.

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Total. (Column 4).
		$ c.
	I.—Received by the Corporation for its own use.	
	A.—*Balance from 31st December, 1896.*	
	(b) Cash (not already shown under 1):	
3.	(ii) In bank	2,462 15
	B.—*Sums Received Wholly or Partly on Capital Stock.*	
4.	(a) Calls on joint stock permanent capital	10,288 51
	C.—*Receipts on account of investments, loans or debts.*	
	(a) On Mortgages of Realty:—	
10.	(i) Principal	39,054 78
11.	(ii) Interest	21,278 71
	(b) On other securities:—	
12.	(i) Principal	960 38
13.	(ii) Interest or dividends	2,760 00
	(c) Unsecured debts:	
15.	(ii) Interest from bank account, etc	69 60
	D.—*Receipts from Real Estate owned beneficially by Corporation.*	
16.	(a) Sales (not included in any of foregoing items)	8,853 00
17.	(b) Rents	59,884 73
	F.—*Borrowed Money.*	
26.	(b) Borrowed by taking deposits chiefly replaced as included in contra item No. 19	26,015 53
	G.—*Receipts from other sources, viz.*	
30.	(a) Refunds, etc., deducted from management expenses in annual report	658 86
	Totals	172,286 25

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Total. (Column 4.)
	I.—Expended on Corporation Account.	
	A.—*Sums Loaned or Invested on Capital Account.*	$ c.
1.	(*a*) Loaned on Mortgages of Realty	4,617 45
	(*b*) Loaned or invested in other securities, viz. :	
2.	(i) Maintenance of loans	13,818 20
	B.—*Expended on Stock Account.*	
8.	Dividends paid on permanent preference stock	2,570 77
	C.—*Borrowed Money (other than foregoing) or Interest thereon paid, viz.:*	
18.	(*a*) Bank account (Principal and interest)	40 96
19.	(*b*) Deposits : Principal, $43,913.05 ; interest, $3,052.04	46,965 09
20.	(*c*) Debentures issued in Canada : Principal, $10,623.34 ; interest, $14,905.47	25,528 81
21.	(*d*) Debentures issued elsewhere : Principal..... ; interest, $31,377.82 .	31,377 82
	D.—*Management Expenses (other than foregoing).*	
25.	(*a*) Salaries and fees	7,018 79
26.	(*b*) Commission or brokerage	20 00
28.	(*d*) Stationery, postage, printing and advertising	317 52
29.	(*e*) Law costs	267 35
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates	157 00
31.	(*g*) Travelling expenses	25 34
	E.—*Other Expenditures, viz.:*	
33.	(*a*) Charges on debentures	2,363 00
34.	(*b*) Interest on mortgage charge, overdue payments, etc	2,317 08
35.	(*c*) Maintenance of real estate	32,819 34
	F.—*Balance.*	
	(*b*) Cash in various banks	2,061 73
	Totals	172,286 25

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	39,607 04
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4.942%; on debentures, 4.52%.	
7. Of the mortgages held by the Corporation all are on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897	8,338 72
11. How often are the securities held by the Corporation valued. Annually.	
12. (a) What officers of the Corporation are under bond and for what sum respectively?	
13. When were the accounts of the Corporation last audited? 15th January, 1898.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed). W. F. Davison, Toronto, Ont.; R. F. Spence, Toronto, Ont.	

THE ONTARIO INDUSTRIAL LOAN AND INVESTMENT COMPANY (LIMITED).

Head Office, Toronto

Incorporated 28th May, 1880, under Letters Patent of Ontario, issued under the Ontario Joint Stock Letters Patent Act. (R.S O. 1877, c. 150.)

For the lending and the borrowing powers see the Letters Patent and R S.O. 1877, c. 150, secs. 30, 52, 58; also Loan Corporations Act, R S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Ontario Industrial Loan and Investment Company Limited, of Toronto, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario pursuant to the laws of the said Province.

The head office of the Corporation is at Nos. 13 and 15 Arcade, in the City of Toronto, in the Province of Ontario.

The Board is constituted of six directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
William Booth	President	Toronto, Ont	18 Feb., 1897	17 Feb., 1898
Bernard Saunders	Vice-President	" "	18 " 1897	" 1898
John J. Cook	Vice-President	" "	18 " 1897	" 1898
Alfred Baker	Director	" "	18 " 1897	" 1898
John Harvie	Director	" "	18 " 1897	" 1898
William Wilson	Director	" "	18 " 1897	" 1898
Edmund T. Lightbourn	Manager-Secretary	" "	18 " 1897	" 1898

A. Permanent capital stock: total amount authorized, $500,000; total amount subscribed, $500,000, less $64,000, which has been forfeited for non-payment of calls, as more particulary set out in Schedule A hereto.

Schedule A.

(*b*)—*Fixed and permanent capital stock created by virtue of Joint Stock Companies Acts or Private Acts.*

Last call made, date, 25th February, 1896; rate, per cent., 10; gross amount, $43,600; amount paid thereon, $34,099.95.

Description.	No. of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		$	$ c.	$ c.	$ c.
1. Fully paid	619	.....	61,900 00	61,900 00	
2. 80 per cent. called	3,741	.....	374,100 00	289,347 47	11,027 53
Totals	4,360	.....	436,000 00	351,247 47	11,027 53

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.
(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No.	A.—*Permanent Capital Stock or Shares.*		
1.	(*a*) Ordinary Joint Stock Capital fully paid: Total, $61,900; Total paid thereon	61,900 00	
2.	(*b*) Ordinary Joint Stock Capital, 80 per cent. called: Total called, $299,280; total paid thereon	289,347 47	
5.	(*c*) Unappropriated profits in respect of (1), (2) or (3)	14,103 50	365,350 97
	LIABILITIES TO THE PUBLIC.		
27.	Deposits	25,632 50	
28.	Interest on deposits, due, or accrued or capitalized	754 68	
29.	Debentures issued in Canada	2,000 00	
30.	Interest due and accrued on (29)	25 00	
37.	Owing to banks (including interest due or accrued)	7,112 91	
40.	Other liabilities to the public, viz.:—		
41.	(a) Mortgages payable and accrued interest	194,452 81	
42.	(b) Taxes on real estate	15,996 34	
43.	(c) Sundry accounts	150 00	246,124 24
	Total actual liabilities		611,475 21
	CONTINGENT LIABILITIES.		
48.	Money for which the Corporation is contingently liable, viz.:—		
49.	(*a*) Principal guaranteed; two mortgages sold	1,127 17	
	Total contingent liabilities	1,127 17	

Balance Sheet as at 31st December, 1897.

Cr.

		$ c.	$ c.
	I.—Assets of which the Corporation is the Beneficial Owner.		
	A.—*Immovable Property Owned Beneficially by Corporation.*		
5.	(*b*) Freehold land (including buildings) other than foregoing	454,636 05	
6.	(*c*) Leasehold land (including buildings) other than foregoing	81,049 00	
			535,685 05
	B.—*Debts Secured by Mortgages of Land.*		
*9.	(*a*) Debts (other than item 10) secured by mortgages of land, being mortgages and agreements principally for balances due on sales of land		67,654 78
12.	(*d*) Of the debts mentioned in items 9, 10 and 11 the sum of $530 is due by directors or officers of the Corporation (*Not extended*)		
	C.—*Debts not above enumerated for which the Corporation holds Securities as follows:*		
20.	(*h*) Debts secured only by permanent stock or shares of the Corporation		1,10 02
	E.—*Cash.*		
31.	(*a*) On hand		409 05
	F.—*Assets not hereinbefore mentioned.*		
37.	(*a*) Rents receivable, due and accrued	6,028 31	
38.	(*b*) Office furniture	590 00	
			6,618 31
	Total of assets owned beneficially by Corporation		611,475 21
	II.—Assets not Owned Beneficially by Corporation but for which the Corporation is Accountable.		
	A.—*As Guarantor.*		
	(*a*) Mortgage securities:		
43.	(i) Principal, mortgages on land sold and guaranteed by Company	1,127 17	

* Certain mortgages were assigned as collateral security for bank overdraft.

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1).
		$ c.
	I.—Received by the Corporation for its own use.	
	A.—*Balance from 31st December, 1896.*	
	(*b*) Cash (not already shown under (1)):	
2.	(i) On hand	135 22
	B.—*Sums Received Wholly or Partly on Capital Stock.*	
4.	(*a*) Calls on joint stock permanent capital	4,363 25
	Interest on calls	8 35
	C.—*Receipts on Account of Investments, Loans or Debts.*	
	(*a*) On Mortgages of Realty :	
10.	(i) Principal	3,398 31
11.	(ii) Interest	2,666 34
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*	
17.	(*b*) Rents	27,176 81
	F.—*Borrowed Money.*	
25.	(*a*) Bank or other advances, discounts or overdrafts	3,482 04
26.	(*b*) Borrowed by taking deposits	1,286 69
29.	(*c*) Borrowed otherwise, viz. :	
	Mortgages payable	1,674 75
	Totals	44,791 76

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)
I.—Expended on Corporation Account.	$ c.
A.—*Sums Loaned or Invested on Capital Account.*	
Item No. 1. (*a*) Taxes and charges on mortgages and agreements	1,263 87
C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*	
18. (*a*) Bank account (principal and interest)	220 35
19. (*b*) Deposits: principal, $11,595.44; interest, $880.92	12,476 36
20. (*c*) Debentures issued in Canada: interest, $100	100 00
21. (*d*) Mortgages payable	11,606 97
D.—*Management Expenses (other than foregoing).*	
25. (*a*) Salaries and fees	3,060 00
28. (*d*) Stationery, postage, printing and advertising	400 27
29. (*e*) Law costs	121 20
32. (*h*) Registration fees	105 00
E.—*Other Expenditures, viz.:*	
33. (*a*) Disbursements on real estate owned	15,028 69
F.—*Balance.*	
37. (*a*) Cash on hand	409 05
Totals	44,791 76

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898.—None.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. —None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898, bank, $7,112.91 ; deposits, $6,000, and mortgages payable, $90,497.50.....	103,610 41
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898, mortgages and agreements mostly now due.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 5% ; on debentures, 5% ; on mortgages payable, 5.57%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6¼% ; on other securities.	
7. Of the mortgages held by the Corporation all are on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897, mortgages and agreements and interest.....	47,234 86
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897—number, none ; amount, none.	
10. Aggregate market value of the land mortgaged to the Corporation, $	
11. How often are the securities held by the Corporation valued? Principally of vacant land. Impossible to state value owing to condition of real estate market.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager	5,000 00
13. When were the accounts of the Corporation last audited? To 31st December, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898: Sherman E. Townsend, Toronto, Ont. ; James T. Locke, Toronto, Ont.	

THE PROVIDENT INVESTMENT AND MORTGAGE GUARANTEE COMPANY OF ONTARIO, LIMITED.

Head Office, Toronto.

Incorporated on 3rd November, 1893, by Letters Patent of Ontario, issued under the Ontario Joint Stock Companies' Letters Patent Act (R. S. O. 1887, c. 157).

For the lending and the borrowing powers see the Letters Patent (which contain special limitations).

Annual Statement

Of the condition and affairs of the Provident Investment and Mortgage Guarantee Company of Ontario, Limited, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 26 King street east, in the City of Toronto, in the Province of Ontario.

The Board is constituted of directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Robert Jaffray	President	Toronto	20th January, 1897	19th Jan'y, 1898.
Hon. Geo. A. Cox	Vice-President	"	"	"
Jos. W. Flavelle	Director	"	"	"
J. J. Kenny	Director	"	"	"
Robert Kilgour	Director	"	"	"
A. E. Ames	Director	"	"	"
H. M. Asling	Manager	"	"	"
F. W. Scott	Secretary	"	"	"

A. Permanent capital stock: Total amount authorized, $2,500,000; total amount subscribed, $800,000, as more particularly set out in schedule A.

SCHEDULE A.

(b.) Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or Private Acts.

Description.	No. of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		$	$ c.	$ c.	$ c.
1. Fully called.....	8,000	100	800,000 00	800,000 00	none.
Totals.....	8,000	.....	800,000 00	800,000 00	....

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS.)		
Item No.	A.—*Permanent Capital Stock or Shares.*		
1.	(a) Ordinary joint stock capital fully called: Total called $800,000, total paid thereon.....	800,000 00	
4.	(d) Dividends declared in respect of (1), but not yet paid	10,000 00	
7.	(g) Contingent fund in respect of (1)...	11,720 45	
			821,720 45
	LIABILITIES TO THE PUBLIC.		
44.	Mortgages payable with accrued interest	89,394 15	
45.	Amounts due bankers in Canada against securities owned by Company, with accrued interest	442,655 01	
46.	Amounts due bankers in Great Britain against securities owned by Company, with accrued interest.....	275,151 26	
40.	Other liabilities to the public, viz.:		
41.	(a) Accrued ground rents on property leased	1,271 50	
42.	(b) Accounts due by Company.....	7 55	
			788,479 47
	Total actual liabilities.....	....	1,610,199 92

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing	614,479 77	
6. (*c*) Leasehold land (including buildings) other than foregoing	31,000 00	
7. (*d*) Rents due and accrued	7,696 61	
8. (*e*) Unearned insurance	316 28	
		653,492 66
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land		898 50
D.—*Unsecured Debts.*		
27. (*a*) Sundry accounts due Company		1,544 86
E.—*Cash.*		
31. (*a*) On hand	1,322 22	
32. (*b*) In bank	13,478 62	
		14,800 84
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Dominion of Canada stock	90,520 00	
38. (*b*) Street Railway, Loan Company and other stocks and bonds with accrued interest	847,853 06	
42. (*d*) Bills receivable	1,090 00	
		939,463 06
Total of assets owned beneficially by Corporation		1,610,199 92

Cash Account.

Receipts for the year ending 31st December, 1897.

		Amount carried to earnings maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I.—Received by the Corporation for its own use.	$ c.	$ c.
	A.—*Balances from 31st December, 1896.*		
Item No.	(i) Cash (not already shown under (1)):		
2.	(i) On hand		661 16
3.	(ii) In bank		13,444 07
	C.—*Receipts on account of Investments, Loans or Debts.*		
	(*a*) On Mortgages of Realty:		
11.	(ii) Interest	474 04	474 04
	(*b*) On other securities:		
12.	(i) Principal		524,743 32
13.	(ii) Interest or dividends and profits on purchase and sale of bonds, stocks and debentures	47,459 55	47,459 55
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*		
16.	(*a*) Sales (not included in any of foregoing items)		38,327 38
17.	(*b*) Rents	34,725 63	34,725 63
	F.—*Borrowed Money.*		
25.	(*a*) Bank or other advances, discounts or overdrafts against security of stocks, bonds and debentures		697,806 27
	Totals	82,659 22	1,357,641 42

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c.
Item No. A.—*Sums loaned or invested on Capital Account.*		
6. (*c*) Real Estate purchased		15,932 08
7. (*d*) Incumbrances on realty paid off		21,000 00
B.—*Expended on Stock Account.*		
8. Dividends paid on permanent stock ($3,750 arrears in 1896)	40,000 00	43,750 00
C.—*Borrowed money (other than foregoing) or interest thereon paid, viz.:*		
18. (*a*) Bank account (interest on advances)	7,622 54	7,622 54
D.—*Management Expenses (other than foregoing):*		
25. (*a*) Salaries and fees	762 10	
26. (*b*) Commission or brokerage	103 75	
28. (*d*) Stationery, postage, printing and advertising	196 95	
29. (*e*) Law costs	280 11	
31. (*g*) Expenses inspection	139 00	1,481 91
E.—*Other expenditures, viz.:*		
33. (*a*) Purchase of stocks, bonds, and debentures		1,220,166 21
34. (*b*) Accrued interest	10,202 11	
35. (*c*) Taxes, $11,624.80; repairs, $3,905.72; insurance, $933.40	22,057 28	
36. (*d*) Fuel, $1,107.36; ground rent, $4,486.00		32,259 39
Sundry accounts due by Company		628 45
F.—*Balance.*		
37. (*a*) Cash on hand $ 1,322 22		
(*b*) Cash in various banks 13,478 62		14,800 84
Totals	81,363 84	1,357,641 42

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6%.	
7. Of the mortgages held by the Corporation, $898.50 is on realty situate in Ontario.	
10. Aggregate market value of the land mortgaged to the Corporation..... ..	1,500 00
11. How often are the securities held by the Corporation valued? Yearly.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager, $2,500.	
13. When were the accounts of the Corporation last audited? For year ending 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897: E. R. Wood.	

THE SCOTTISH ONTARIO AND MANITOBA LAND COMPANY (LIMITED).

Head Office, Glasgow, Scotland.

Chief agency in the Province of Ontario, No. 11 Toronto Street, Toronto.

Attorneys for the Province of Ontario for purposes of Loan Corporations Act (P. of Att'y. 1st Sep.' 1897): James Lendrum Scarth, of Toronto, and John Galloway Scott of Toronto.

Commissioners in Canada for execution of Deeds, etc. (P. of Att'y., 8th Oct., 1889): James Lendrum Scarth of Toronto; Alexander Bain of Winnipeg; and John Galloway Scott of Toronto.

Constating Instruments.

Certificate of incorporation (15th Dec., 1879) issued by Registrar of Joint Stock Companies for Scotland, under the Companies' Act, 1862, 1867 and 1877.

Memorandum of Association and Articles of Association (both of the 12th Dec., 1879) under the above Acts and amendment to 73rd Article made 24th April, 1882.

For the lending and borrowing powers see the Memorandum of Association and the Articles of Association, and the (Imp.) Companies' Acts 1862 to 1893; also for transactions in Ontario, see the Loan Corporations Act, R S O 1897, c. 205.

Annual Statement

Of the condition and affairs of the Scottish Ontario and Manitoba Land Company (Limited) of Glasgow, Scotland, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The Board is constituted of five directors holding office for three years.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Hugh Wright	President	Port William, Scot'ld	1st April, 1896	April, 1899
Peter Sturrock	Director	London Road, "	1st " 1895	" 1898
Samuel Gunn	Director	Glasgow, "	5th " 1897	" 1900
Robert Miller	Director	Edinburgh, "	7th " 1896	" 1899
Robert Anderson	Director	" "	5th " 1897	" 1900
J. L. Scarth	Com'r. in Ontario.	Toronto		
A. Bain	" in Manitoba	Winnipeg		
James Muirhead	Secretary	Glasgow		

A. Permanent capital stock: total amount authorized, $2,433,333 33; total amount subscribed, $1,260,666.66, reduced by forfeited shares to $1,135,344 65, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(b).—Fixed and permanent capital stock created by virtue of Joint Stock Companies Acts or Private Acts

Description.	No. of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.
		£	$ c.	$ c.
2. 70 per cent. called A shares.....	10,518	10	511,875 99	*510,303 52
3. 70 per cent. called B. shares.....	12,811	"	623,468 66	†438,209 26
Totals	23,329	.....	1,135,344 65	948,512 78

* Of this amount $151,990.33 has been paid up in anticipation of calls.
† " $1,780.20 " " "

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. *Permanent Capital Stock or Shares*		
2. (*b*) Ordinary joint stock capital, 70% called: total called $794,741.25; total paid thereon.....	794,741 25	
Payments in anticipation of calls	153,771 53	
6. (*f*) Reserve fund in respect of (1), (2) or (3)	12,166 67	
C.—*Liabilities to Stockholders or Shareholders other than as already shown under A.*		
24. Outstanding interest due to A shareholders	30,273 15	990,952 60
LIABILITIES TO THE PUBLIC.		
27. Deposits	3,406 66	
28. Interest on deposits due, or accrued or capitalized	139 80	
31. Debentures issued elsewhere than in Canada	153,048 34	
32. Interest accrued on (31)	750 13	
40. Other liabilities to the public, viz.:		
41. (*a*) Sundry open accounts	12,122 60	169,467 53
Total actual liabilities.....		1,160,420 13

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows:—		
2. (i) At Winnipeg, Man., held in freehold subject to a mortgage of $3,000	10,585 46	
3. (ii) At Brandon, Man., held in freehold	9,610 60	
5. (*b*) Freehold land (including buildings) other than foregoing	893,897 40	914,093 46
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	65,349 22	
10. (*b*) Debts secured by mortgaged land held for sale	125,956 39	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	3,619 89	194,925 50
12. (*d*) Of the debts mentioned in items 9, 10 and 11 nothing is due by directors or officers of the Corporation. (*Not extended*).		
C.—*Debts not above enumerated for which the Corporation holds securities as follows:*		
22. (*j*) Debts secured by chattel mortgage	150 00	
23. (*k*) Debts secured by bills receivable	2,916 27	
24. (*l*) Debts secured by special agreements	3,804 14	6,870 41
D.—*Unsecured Debts.*		
27. (*a*) Rents accrued and in arrears		2,759
E.—*Cash.*		
31. (*a*) On hand	203 54	
32. (*b*) In bank	2,646 10	2,849 64
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Office furniture	216 56	
38. (*b*) Balance at debit open sundry accounts	1,141 97	1,358 53
39. (*c*) Suspense account for interest due "A" shareholders as per contra		30,273 15
40. (*d*) Amount at debit profit and loss account		7,290 15
Total of assets owned beneficially by Corporation		1,160,420 13

Cash Account.

Receipts for the year ending 31st December, 1897.

		Total. (Column 4.)
	I.—Received by the Corporation for its own use.	$ c.
	A.—*Balances from 31st December, 1896.*	
Item No.	(*b*) Cash (not already shown under (1)).	
2.	(i) On hand	391 45
3.	(ii) In bank	8,850 62
	B.—*Sums Received Wholly or Partly on Capital Stock.*	
4.	(*a*) Payments in anticipation of calls on joint stock permanent capital	9,020 67
	C.—*Receipts on account of investments, loans or debts.*	
	(*a*) On Mortgages of Realty :—	
10.	(i) Principal	14,164 35
11.	(ii) Interest	4,065 15
	D.—*Receipts from real estate owned beneficially by Corporation.*	
17.	(*b*) Rents, etc., less expense account	1,352 47
	E.—*Miscellaneous.*	
18.	(*a*) Transfer fees	7 29
	Totals	37,852 00

Cash Account.

Expenditure for the year ending 31st December, 1897.

		Total. (Column 4.)
		$ c.
I.—Expended on Corporation Account.		
A.—Sums Loaned or Invested on Capital Account.		
Item No. 6. (*c*) Real estate purchased		8,567 39
C.—Borrowed Money (other than foregoing) or interest thereon paid, viz:		
19. (*b*) Deposits: Principal, $243.33; Interest, (included in 21)		243 33
21. (*d*) Debentures issued elsewhere: Principal, $3,893.33; interest, $4,927.40 (including interest on deposits)		8,820 73
D.—Management Expenses (other than foregoing.)		
25. (*a*) Salaries and Fees		1,917 77
28. (*d*) Stationery, Postage, Printing and Advertising		810 53
29. (*e*) Law costs, etc		
32. (*h*) Insurances or taxes, etc., on property held by the corporation		14,614 94
E.—Other Expenditures, viz.:		
33. (*a*) Exchange		6 14
34. (*b*) Charges on issue of debentures		21 53
F.—Balance.		
37. (*a*) Cash on hand	$ 203 54	
(*b*) Cash in banks	2,646 10	2,849 64
Totals		37,852 00

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

		$ c.
2.	Amount of debentures issued by the Corporation elsewhere which will mature in 1898.	51,348 20
4.	Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	5,400 00
5.	Average rate of interest per annum paid by the Corporation during 1897 on deposits, 3½ per cent.; on debentures, 4¼ per cent.	
6.	Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6 per cent.	
7.	Of the mortgages held by the Corporation $47,115.26 is on realty situate in Ontario, and $144,190.35 is on realty situate elsewhere.	
8.	Loans written off or transferred to real estate account during 1897	8,100 34
10.	Aggregate market value of the land mortgaged to the Corporation? Cannot state, as there is no present demand for much of the land.	
11.	How often are the securities held by the Corporation valued? Price lists subject to annual revision and revised more frequently when business is active.	
12.	(a) What officers of the Corporation are under bond and for what sum respectively? None.	
13.	When were the accounts of the Corporation last audited? 31st December, 1897.	
14.	Names and address of the auditors respectively for 1897 and 1898. D. S. Carson, Glasgow, Scotland; John Maughan, Toronto, Ont.; T. W. Fisher.	

THE TORONTO LAND AND INVESTMENT CORPORATION.

Head Office, Toronto.

Incorporated by Letters Patent of Ontario (30th January, 1886) issued under the Ontario Joint Stock Companies Letters Patent Act (R. S. O. 1877, c. 150).

For the lending and borrowing powers see R. S. O. 1877, c. 150; R. S. O. 1887, c. 157, and Loan Corporations Act, R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Toronto Land and Investment Corporation at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the corporation is at No. 21 Leader Lane, in the City of Toronto, in the Province of Ontario.

The Board is constituted of seven directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
George R. R. Cockburn.	President	Toronto	20th Jan'y, 1897	11th Jan'y, 1898.
Frederick Wyld	Vice-President	"	" "	" "
Hon. Geo. A. Cox	Director	"	" "	" "
Donald McKay	Director	"	" "	" "
Horatio W. Nelson	Director	"	" "	" "
Robert Kilgour	Director	"	" "	" "
John Catto	Director	"	" "	" "
John C. Copp	Manager and Secretary.	"	" "	" "

A. Permanent capital stock: Total amount authorized, $500,000; total amount subscribed, $400,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*b*) *Fixed and Permanent Capital Stock created by virtue of Joint Stock Companies' Acts or Private Acts.*

—	Number of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		$	$ c.	$ c.	$ c.
1. Fully called	8,000	50	400,000 00	243,730 00	156,270 00
Totals	8,000	50	400,000 00	243,730 00	156,270 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

—	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
A.—*Permanent Capital Stock or Shares.*		
Item No.		
1. (*a*) Ordinary joint stock capital fully called: Total subscribed, $400,000; total paid thereon	243,730 00	
4. (*d*) Dividends declared in respect of (2), but not yet paid	22 97	
7. (*g*) Contingent fund in respect of (2)	1,838 73	
		245,591 70
LIABILITIES TO THE PUBLIC.		
27. Deposits	1,109 65	
28. Interest on deposits due, or accrued, or capitalized	25 74	
29. Debentures issued in Canada	1,850 00	
30. Interest due and accrued on (29)	46 25	
31. Debentures issued elsewhere than in Canada	4,866 67	
32. Interest due and accrued on (31)	110 37	
37. Owing to banks (including interest due or accrued)	13,732 59	
40. Other liabilities to the public, viz.:		
41. (a) Mortgages on real estate	13,500 00	
42. (b) Interest	405 00	
		35,646 27
Total actual liabilities		281,237 97

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing		201,136 60
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	76,830 41	
10. (*b*) Debts secured by mortgaged land held for sale	1,004 58	77,834 99
C. *Debts not above enumerated for which the Corporation holds Securities as follows:*		
20. (*h*) Debts secured only by Permanent Stock or Shares of the Corporation	800 00	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	22 85	822 85
D.—*Unsecured Debts.*		
27. (*a*) Open accounts	1,410 57	
30. (*d*) Interest due or accrued on items 27 to 29 and not included therein	6 40	1,416 97
E.—*Cash.*		
32. (*b*) In bank		26 56
Total of assets owned beneficially by Corporation		281,237 97

CASH ACCOUNT.

Receipts for the year ending 31st December, 1897.

		Total. (Column 4.)
	I.—RECEIVED BY THE CORPORATION FOR ITS OWN USE.	$ c.
	A.—*Balances from 31st December, 1896.*	
Item No.	(*b*) Cash (not already shown under (1)) :—	
2.	(i) On hand	195 78
3.	(ii) In bank	26 56
	C.—*Receipts on account of Investments, Loans or Debts.*	
	(*a*) On Mortgages of Realty :—	
10.	(i) Principal	7,763 79
11.	(ii) Interest	2,341 49
	(*c*) Unsecured debts :—	
14.	(i) Principal	4,231 53
	D.—*Receipts from real estate owned beneficially by Corporation.*	
17.	(*b*) Rents	6,505 70
	F.—*Borrowed Money.*	
25.	(*a*) Bank or other advances, discounts or overdrafts	883 35
	Totals	21,948 20

CASH ACCOUNT.

Expenditure for the year ending 31st December, 1897.

	Total. (Column 4).
	$ c.
I.—EXPENDED ON CORPORATION ACCOUNT.	
C.—*Borrowed money (other than foregoing) or interest thereon paid, viz.:*	
Item No. 18. (*a*) Bank account (interest on overdraft)	789 50
19. (*b*) Deposits, interest on	51 49
20. (*c*) Debentures issued in Canada: Principal, $5,000; interest, $281.55	5,281 55
21. (*d*) Debentures issued elsewhere: interest	220 74
D.—*Management Expenses (other than foregoing).*	
25. (*a*) Salaries and fees	1,080 00
28. (*d*) Stationery, postage, printing and advertising	69 15
29. (*e*) Law costs	73 94
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	5,611 78
32. (*h*) Insurances or taxes advanced on property mortgaged to the Corporation	2,166 79
E.—*Other Expenditures, viz.:*	
33. (*a*) Registration fee	55 00
34. (*b*) Interest on mortgages	810 00
35. (*c*) Repairs to properties under rental	1,764 14
36. (*d*) Loans on open accounts	3,947 56
F.—*Balance.*	
(*b*) Cash in bank	26 56
Totals	21,948 20

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898. All securities are due and are being realized.	
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4%; on debentures, 4½%.	
6. Average rate of interest per annum received by the Corporation during 1897. On Mortgages of Realty 6%.	
7. Of the mortgages held by the Corporation all are on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897	6,464 14
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897. No., none; amount, none.	
10. Aggregate market value of the land mortgaged to the Corporation. Impossible to answer this question.	
1. How often are the securities held by the Corporation valued? Whenever deemed advisable by directors.	
(a) What officers of the Corporation are under bond and for what sum respectively? None.	
13. When were the accounts of the Corporation last audited? 9th December, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed); William Kerr, Toronto, Ont.; Joseph Fletcher, Toronto, Ont.	

THE TORONTO SAVINGS AND LOAN COMPANY.

Head Office, Peterboro', Ont.

Incorporated as "The Toronto Real Estate Investment Company," by Letters Patent of Ontario, (June 15th, 1885), issued under the Ontario Joint Stock Companies' Letters Patent Act (R. S. O. 1877, c. 150). Supplementary Letters Patent of Ontario (29th December, 1887,) were issued under R. S. O. 1887, c. 157, defining the borrowing powers, etc. Further Supplementary Letters Patent of Ontario (25th September, 1889,) were issued under the last mentioned Act, increasing the capital stock from $400,000 to $2,000,000. Further Supplementary Letters Patent of Ontario (30th March, 1891,) were issued under the same Act, conferring agency powers on the Company. The corporate name was by Order-in Council of Ontario (2nd April, 1891,) changed to "The Toronto Savings and Loan Company."

For the lending and the borrowing powers, see the Letters Patent and the Acts R. S. O. 1877, c. 150; R. S. O. 1887, c. 157; R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Toronto Savings and Loan Company of Peterborough, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 437 George street, in the Town of Peterborough, in the Province of Ontario.

The Board is constituted of nine directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Hon. Geo. A. Cox	President	Toronto	11th February, 1897.	10th February, 1898.
Richard Hall A. A. Cox	Vice-Presidents	Peterborough	" "	" "
Peter Hamilton	Director	"	" "	" "
D. W. Dumble	Director	"	" "	" "
James Stevenson	Director	"	" "	" "
A. L. Davis	Director	"	" "	" "
Wm. Cluxton	Director	"	" "	" "
H. I. Le Fevre	Director	"	" "	" "
W. G. Morrow	Manager	"	" "	" "
A. A. Cox	Secretary	"	" "	" "

A. Permanent capital stock: total amount authorized, $2,000,000; total amount subscribed, $1,000,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(a).—Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or Private Acts.

Description.	No. of shares.	Par value of shares.	Total amount held	Total amount paid thereon.	Total remaining unpaid on calls.
		$ c.	$ c.	$ c.	$ c.
1. Fully paid	5,000	100 00	500,000 00	500,000 00	None.
2. 20 per cent. called	5,000	100 00	500,000 00	100,000 00	None.
Totals	10,000		1,000,000 00	600,000 00	None.

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.– *Permanent Capital Stock or Shares.*		
1. (a) Ordinary joint stock capital fully called: Total called, $500,000; total paid thereon	500,000 00	
2. (b) Ordinary joint stock capital, 20% called: Total called, $100,000; total paid thereon	100,000 00	
4. (d) Dividends declared in respect of (1), (2) or (3), but not yet paid.	18,000 00	
6. (f) Reserve fund in respect of (1), (2) or (3)	110,000 00	
7. (g) Contingent Fund in respect of (1), (2) or (3)	5,193 53	
		733,193 53
LIABILITIES TO THE PUBLIC.		
27. Deposits	222,640 46	
28. Interest on deposits, due, or accrued or capitalized	3,535 20	
29. Debentures issued in Canada	637,512 46	
30. Interest due and accrued on (29)	13,508 45	
31. Debentures issued elsewhere than in Canada	8,273 33	
32. Interest accrued on (31)	48 16	
39. Due on loans in process of completion or to pay assumed mortgages.	1,110 55	
30. Other liabilities to the public, viz. :—		
41. (a) Sundry accounts due by Company	707 84	
		887,336 45
Total actual liabilities		1,620,529 98

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable property owned beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing, also accrued rents	557,661 88	
6. (*c*) Leasehold land (including buildings) other than foregoing	35,000 00	592,661 88
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	76,460 46	
11. (*c*) Interest due or accrued on item 9 and not included therein	1,736 05	78,196 51
12. (*d*) Of the debts mentioned in items 9 and 11, nothing is due by directors or officers of the Corporation.		
C.—*Debts not above Enumerated for which the Corporation holds Securities as follows.*		
22. (*j*) Debts secured by stocks and bonds	886,920 00	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	20,535 60	907,455 60
D.—*Unsecured Debts.*		
27. (*a*) Sundry accounts due Company	1,879 20	1,879 20
E.—*Cash.*		
31. (*a*) On hand	1,293 37	
32. (*b*) In bank	39,043 42	40,336 79
Total of assets owned beneficially by Corporation		1,620,529 9

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I.—Received by the Corporation for its own use.		
	A.—*Balances from 31st December, 1896.*	$ c.	$ c.
	(*b*) Cash (not already shown under (1)):		
2.	(i) On hand		1,413 50
3.	(ii) In bank		21,372 05
	C.—*Receipts on Account of Investments, Loans or Debts.*		
	(*a*) On Mortgages of Realty:		
10.	(i) Principal		3,358 66
11.	(ii) Interest	1,526 36	1,526 36
	(iii) Insurance and taxes advance re mortgages		60 16
	(*b*) On other securities:		
13.	(i) Interest or dividends	49,596 20	49,596 20
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*		
16.	(*a*) Sales (not included in any of foregoing items)		2,795 93
17.	(*b*) Rent	36,566 41	36,566 41
	F.—*Borrowed Money.*		
26.	(*b*) Borrowed by taking deposits		262,224 09
27.	(*c*) Borrowed on debentures		127,346 30
	G.—*Receipts from Other Sources, viz.:*		
30.	(*a*) Sundry accounts due Company		624 10
	(*b*) Amount retained from mortgage payments to meet prior encumbrances		1,110 55
	Totals		507,994 31

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I.—Expended on Corporation Account.	$ c.	$ c.
	A.—*Sums Loaned or Invested on Capital Account.*		
1.	(*a*) Loaned on Mortgages of Realty		52,163 17
	(*b*) Loaned or invested in other securities, viz.:		
2.	(i) Stocks and bonds		15,410 00
6.	(*c*) Real estate purchased		5,090 06
	B.—*Expended on Stock Account:*		
8.	Dividends paid on permanent stock. (*Extend into column 1*)	36,000 00	36,000 00
	C.—*Borrowed Money (other than foregoing) or Interest thereon Paid, viz.:*		
18.	(*a*) Bank account (principal and interest)	3 55	3 55
19.	(*b*) Deposits: Principal, $187,597.35; interest, $6,210.33	6,210 33	193,807 8
20.	(*c*) Debentures issued in Canada: Principal, $134,947.73; interest, $29,012.37	29,012 37	163,960 10
21.	(*d*) Debentures issued elsewhere: Interest, $540.81	540 81	540 81
	D.—*Management Expenses (other than foregoing).*		
25.	(*a*) Salaries and fees	1,202 67	
26.	(*b*) Commission or brokerage	151 92	
28.	(*d*) Stationery, postage, printing and advertising	283 95	
29.	(*e*) Law costs	192 39	
30.	(*f*) Fuel, rent, taxes (other than 32) and rates on property owned	715 32	
			2,546 25
32.	(*h*) Insurances or taxes advanced on property mortgaged to the Corporation		127 28
	E.—*Other Expenditures, viz.*		
33.	(*a*) Taxes on property owned	1,291 67	
34.	(*b*) Ground rent on leasehold property	1,250 00	
35.	(*c*) Repairs and improvements on property owned	3,302 41	
36.	(*d*) Insurance on property owned	1,399 89	
			7,243 97
	Sundry accounts due by Company		764 65
	F.—*Balance.*		
37.	(*a*) Cash on hand $1,293 37		
	(*b*) Cash in various banks 39,043 42		40,336 79
	Totals		507,994 31

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898	94,700 00
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898	7,299 90
3. Amount of other existing obligations of the Corporation which will mature in 1898, none.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898, not including cashable stocks and bonds amounting to $886,920	1,112 20
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4%; on debentures, 4.46%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5.458%; on other securities, 5½%.	
7. Of the mortgages held by the Corporation, $76,160.46 is on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897, none.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No., none; amount, none.	
10. Aggregate market value of the land mortgaged to the Corporation	166,480 0
11. How often are the securities held by the Corporation valued? Have been valued within a year.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? None.	
13. When were the accounts of the Corporation last audited? 26th January, 1898.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed), E. R. Wood, Toronto.	

THE WALKERVILLE LAND AND BUILDING COMPANY (LIMITED).

Head Office, Walkerville, Ontario.

Incorporated by Letters Patent of Ontario (22nd October, 1890) issued under the Ontario Joint Stock Companies Letters Patent Act, R. S. O. 1887, c. 157.

For the lending and the borrowing powers see the above instrument and Act, also R. S. O. 1897, c. 205.

Annual Statement

Of the condition and affairs of the Walkerville Land and Building Company (Limited), Walkerville, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is on Sandwich street in the Town of Walkerville, in the Province of Ontario.

The Board is constituted of four directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows:

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
C. Chandler Walker	President	Walkerville, Ont	6th July, 1897	6th July, 1898.
F. H. Walker	Vice-President	"	"	"
J. Harrington Walker	Director	"	"	"
Wm. Aikman, jr	Director	Detroit, U.S.A.	"	"
Douglas F. Matthew	Secretary	Walkerville, Ont	"	"

A. Permanent capital stock: Total amount authorized, $1,000,000; total amount subscribed, $1,000,000 as more particularly set out in Schedule A hereto.

Last call made, date, 1st January, 1891; rate, 50%; gross amount, $500,000; amount paid thereon, $500,000.

SCHEDULE A.

(b)—Fixed and permanent capital stock created by virtue of Joint Stock Companies Acts or Private Acts.

Description.	No. of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.
		$	$ c.	$ c.
2. 50 per cent. called.....	10,000	100	1,000,000 00	500,000 00
Totals....	10,000	100	1,000,000 00	500,000 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

DR. *Capital and Liabilities.*

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS.)		
Item No. A.—*Permanent Capital Stock or Shares.*		
2. (b) Ordinary joint stock capital, 50% called: total called, $500,000; total paid thereon.....	500,000 00	
5. (e) Unappropriated profits in respect of (2)	30,686 73	530,686 73
LIABILITIES TO THE PUBLIC.		
29. Debentures issued in Canada	200,000 00	
30. Interest accrued on (29).....	2,500 00	
38. Due on bills payable other than (37) (including interest due or accrued) ...	132 00	
40. Other liabilities to the public, viz.:—		
41. (a) Personal accounts.....	778 45	203,410 45
Total actual liabilities.....	.....	734,097 18

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
5. (*b*) Freehold land (including buildings) other than foregoing		600,201 49
B.—*Debts secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	115,162 15	
11. (*c*) Interest due or accrued on items 9 and 10 and not included therein	8,109 88	123,272 03
E.—*Cash.*		
31. (*a*) On hand	125 57	
32. (*b*) In bank	2,444 44	2,570 01
F.—*Assets not Hereinbefore mentioned.*		
37. (*a*) Office furniture and fixtures	88 50	
38. (*b*) Insurance policies	748 70	
39. (*c*) Hotel furnishings	4,953 24	
40. (*d*) Rents	2,026 15	
41. (*e*) Personal accounts	237 06	8,053 65
Total of assets owned beneficially by Corporation		734,097 18

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.	—	Total. (Column 4).
	I.—Received by the Corporation for its own use.	
	A.—*Balances from 31st December, 1896.*	$ c.
	(*b*) Cash (not already shown under (1)).	
2.	(i) On hand	66 56
3.	(ii) In bank	355 60
	C.—*Receipts on account of investments, loans or debts.*	
	(*a*) On Mortgages of Realty :—	
10.	(i) Principal	6,430 24
11.	(ii) Interest	4,115 69
	(*c*) Unsecured Debts :—	
14.	(i) Principal	154 05
15.	(ii) Interest	2 97
	D.—*Receipts from real estate owned beneficially by Corporation.*	
16.	(*a*) Sales (not included in any of foregoing items)	50 00
17.	(*b*) Rents	24 063 43
	G.—*Receipts from other sources, viz. :—*	
30.	(*a*) Wharfage	47 25
	Totals	35,285 79

Cash Account.

Expenditure for the year ending 31st December, 1897.

Item No.			Total. (Column 4.)
	I. Expended on Corporation Account.		$ c.
	A.—*Sums Loaned or Invested on Capital Account.*		
1.	(*a*) Loaned on Mortgages of Realty		1,250 00
6.	(*c*) Real estate purchased		5,116 00
7.	(*d*) Incumbrances on Realty paid off		940 82
	C.—*Borrowed Money (other than foregoing) or interest thereon paid, viz.:*		
20.	(*c*) Debentures issued in Canada: Interest, $10,000		10,000 00
	D.—*Management Expenses (other than foregoing).*		
25.	(*a*) Salaries and fees		1,487 97
29.	(*e*) Law costs		2 00
30.	(*f*) Fuel, rent, taxes (other than in 32) and rates		6,549 06
	E.—*Other Expenditures, viz.:*		
33.	(*a*) Repairs		5,076 07
34.	(*b*) Interest		38 33
35.	(*c*) Fire insurance		928 62
36.	(*d*) Expense		826 91
	(*e*) Fire protection		500 00
	F.—*Balance.*		
37.	(*a*) Cash on hand	$ 125 57	
	(*b*) Cash in bank	2,444 44	
			2,570 01
	Totals		35,285 79

Miscellaneous Statement for the Year Ending 31st December, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898.	200,000 00
3. Amount of other existing obligations of the Corporation which will mature in 1898 ...	3,410 45
5. Average rate of interest per annum paid by the Corporation during 1897 on debentures, 5%; on debenture stock.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 6%; on other securities.	
7. Of the mortgages held by the Corporation, $115,162.15, is on realty situate in Ontario,	
10. Aggregate market value of the land mortgaged to the Corporation, $200,000.	
11. How often are securities held by the Corporation valued? At directors meetings.	
13. When were the accounts of the Corporation last audited? 18th January, 1898.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed) Henry Lye, F.C.A.	

IV. TRUSTS COMPANIES.

ASSETS, LIABILITIES AND MISCELLANEOUS DETAILS.

THE IMPERIAL TRUSTS COMPANY.

Head Office, Toronto, Ont.

Incorporated on the 23rd day of June, 1887, by special Act of the Dominion of Canada, 50-51 Vic. c. 115 (D), which in 1890 was amended by 53 Vic. c. 101 (D).

Annual Statement

Of the condition and affairs of the Imperial Trusts Company of Canada at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 32 Church Street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of nine directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Name of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Henry S. Howland	President	Toronto, Ont.....	17th February, 1897	16th February, 1898
John D. Chipman	Vice-President .	St. Stephens, N. B	" 1897	" 1898
Sir Sandford Fleming, K.C.M.G	Director.....	Ottawa, Ont.....	" 1897	" 1898
Hugh Scott	Director	Toronto, Ont	" 1897	" 1898
Andrew S. Irving	Director	" .. .	" 1897	" 1898
Thomas Walmsley.....	Director.....	"	" 1897	" 1898
C. J. Campbell	Director..... ..	"	" 1897	" 1898
H. M. Pellatt	Director	... .	" 1897	" 1898
Owen Jones	Director.....	London, England.	" 1897	" 1898
James Lockie.....	Manager ... / Secretary ..	Toronto, Ont	" 1897	" 1898

A. Permanent capital stock : Total amount authorized, $500,000 ; total amount subscribed, $400,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(b)—Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or Private Acts.

Last call made: Date 1889; rate 25 per cent. and 10 per cent.; gross amount, $95,295. Amount paid thereon, $95,295.

Description.	No. of shares.	Total amount held.	Total amount paid thereon.
		$ c.	$ c.
2. 25 per cent. called	3,683	358,300 00	92,125 00
3. 10 per cent. called	317	31,700 00	3,170 00
Totals	4,000	400,000 00	95,295 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.
(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES OF STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
2. (*b*) Ordinary Joint Stock Capital, 10 per cent. called: total called, $3,170; total paid thereon	3,170 00	
3. (*c*) Ordinary Joint Stock Capital, 25 per cent. called: total called, $92,125; total paid thereon	92,125 00	
4. (*d*) Dividends declared in respect of (1), (2) or (3), but not yet paid	6,670 65	
5. (*e*) Unappropriated profits in respect of (1), (2) or (3)	8,600 00	
		110,565 65
C.—*Liabilities to Stockholders or Shareholders other than as already shown under A.*		
24. Adjusting charges account	82 33	82 33
		110,647 98
LIABILITIES TO THE PUBLIC.		
40. Other liabilities to the public, viz.:—		
41. (a) Trusts funds received for investment	308,528 92	308,528 92
Total actual liabilities		419,176 90
CONTINGENT LIABILITIES.—None.		
Gross total liabilities		419,176 90

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

	$ c.	$ c.
I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
A.—*Immovable Property Owned Beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :—		
7. (*d*) Office furniture and fixtures		881 73
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land		17,035 88
C.—*Debts not above Enumerated for which the Corporation holds Securities as follows.*		
22. (*j*) Mortgage bonds and debentures		80,280 10
E.—*Cash.*		
32. (*b*) In bank		12,450 27
Total of assets owned beneficially by Corporation		110,647 98
II.—ASSETS NOT OWNED BENEFICIALLY BY CORPORATION BUT FOR WHICH THE CORPORATION IS ACCOUNTABLE.		
A.—*As Guarantor.*		
(*b*) Other securities :—		
45. (i) Principal	298,972 96	
46. (ii) Interest due and accrued	2,755 34	
(iii) Cash on hand uninvested	6,800 62	
Total of assets II	308 528 92	308,528 92
Gross total of assets I, and II		419,176 90

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earning, maintenance or contingent account. (Column 1.)	Amount carried to capital account. Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.
Item No. A.—*Balances from 31st December, 1896.*			
1. (*a*) Capital account—Profit and loss account	6,177 02		6,177 02
C.—*Receipts on Account of Investments, Loans or Debts.*			
(*a*) On Mortgages of Realty:			
10. (i) Principal		2,281 04	2,281 04
11. (ii) Interest	1,421 81		1,421 81
(*b*) On other Securities:			
12. (i) Principal		7,010 50	7,010 50
13. (ii) Interest or dividends	2,808 15		2,808 15
E.—*Miscellaneous.*			
18. (*a*) Commission, Brokerage (or Remuneration as Corporate Agent, Trustee, etc.)	2,070 82		2,070 82
19. (*b*) Premium and Profits on Investments	11,659 38		11,659 38
Totals	24,137 18	9,291 54	33,428 72

II.—Received as Corporate Trustee, Representative, Guardian or Agent in Trust.		$ c.
A.—*Balances from 31st December, 1897.*		
31. (*a*) Capital account		258,769 50
B.—*Received on Account of Investments, Loans or Debts during the year.*		
34. (*a*) Call loans: Principal, $270,903.08; interest 35. (*b*) On other securities: Principal, $14,252.51; interest	$18,569.81 (not extended).	
D.—*Receipts from other sources, viz.:*		
39. (*a*) Trusts funds received for temporary investment	$1,246,044 26	
Less withdrawn again during the year	1,196,284 84	49,759 42
Totals		308,528 92

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	$ c.	$ c.
I. Expended on Corporation Account.		
Item No. A.—*Sums Loaned or Invested on Capital Account.*		
(b) Loaned or invested in other securities, viz.:		
2. (i) Mortgage bonds		5,441 27
B.—*Expended on Stock Account.*		
8. Dividends paid on permanent stock. (*Extend into Column 1*)	6,670 65	6,670 65
D.—*Management Expenses (other than foregoing).*		
25. (a) Salaries and Fees	5,875 15	
28. (d) Stationery, Postage, Printing and Advertising	801 81	
29. (e) Law costs	26 81	
30. (f) Fuel, Rent, Taxes (other than in 32) and rates	592 10	
31. (g) Travelling expenses	5 03	
32. (h) Sundries	49 65	
E.—*Other Expenditures, viz.:*		
33. (a) Directors' fees	1,260 15	
34. (b) Registration fee	55 00	
35. (c) Moving fixtures and alterations in office	200 83	
		8,866 53
F.—*Balance.*		
(b) Cash in bank		12,450 27
Totals		33,428 72

	Amount carried to capital account.
	$ c.
II.—Expended on Trust or Agency Account.	
A.—*Loaned or Invested on Capital Account.*	
42. (a) Loaned on call loans during the year, $235,402.17 (*not extended*).	
(b) Loaned on other securities, viz.:	
43. (i) Mortgage bonds and municipal debentures	170,737 14
44. (ii) Loan company debentures	29,200 00
45. (iii) Loans on call on bonds and debenture stocks	60,005 06
46. (iv) Bank stocks	37,899 75
47. (c) Temporary advances on trusts (secured)	3,886 35
C.—*Balance.*	
54. (a) Cash on hand $3,533 27	
(b) Cash in bank 3,267 35	
	6,800 62
Totals	308,528 92

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4%; on debentures, none; on debenture stock, none.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 8%; on other securities, 4¾%.	
7. Of the mortgages held by the Corporation $7,000 is on realty situate in Ontario, and $10,000 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897, none.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No., none; amount, none.	
10. Aggregate market value of the land mortgaged to the Corporation, estimated, $40,000.	
11. How often are the securities held by the Corporation valued? Yearly or oftener.	
12. (*a*) What officers of the Corporation are under bond and for what sum respectively? Manager, $4,000.	
13. When were the accounts of the Corporation last audited? 31st December, 1897.	
14. Names and addresses of the auditors respectively for 1897 and 1898 (if appointed)? H. W. Eddis, F.C.A., Toronto.	

THE LONDON AND WESTERN TRUSTS COMPANY, LIMITED.

Head Office, London, Ont.

Incorporated on the 17th September, 1896, by Letters Patent of Ontario, issued under the Ontario Joint Stock Companies' Letters Patent Act, R. S. O. 1887, chapter 157. See also R. S. O. 1897, chapters 205, 206.

Annual Statement

Of the condition and affairs of the London and Western Trusts Company Limited, of London, Ontario, at the 31st December, 1897, and from the inception of the Company made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 404 Talbot Street, in the City of London, in the Province of Ontario

The Board is constituted of eighteen directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Geo. C. Gibbons	President	London, Ont	18th February, 1897.	17th February, 1897.
John Labatt	Vice-Presidents	" "	"	"
Charles Mackenzie		Sarnia, "	"	"
John McClary	Director	London, "	"	"
J. W. Little	Director	" "	"	"
T. H. Smallman	Director	" "	"	"
T. G. Meredith	Director	" "	"	"
D. Regan	Director	" "	"	"
R. Fox	Director	" "	"	"
M. D. Fraser	Director	" "	"	"
G. B. Harris	Director	" "	"	"
R. W. Puddicomb	Trustee, Director.	" "	"	"
W. H. Bowlby	Trustee, Director.	Berlin, "	"	"
John McLean	Director	St. Thomas, Ont	"	"
Geo. Moncrieff	Sec., Director.	Petrolia, "	"	"
John Idington	Director	Stratford, "	"	"
J. T. Garrow	Director	Goderich, "	"	"
J. H. Nellis	Director	Woodstock, "	"	"
John B. Kilgour	Manager	London, "		

A. Permanent capital stock · total amount authorized, $500,000; total amount subscribed $500,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*a*).—*Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or Private Acts.*

Description.	No. of shares.	Par value or shares	Total amount held.	Total amount paid thereon.
		$	$	$
2. 20 per cent. called	5,000	100	500,000	100,000
Totals	5,000		500,000	100,000

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities.

DR.

		$ c.	$ c.
	CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No.	A.—*Permanent Capital Stock or Shares.*		
2.	(*b*) Ordinary joint stock capital, 20% called: total called $100,000; total paid thereon	100,000 00	
5.	(*e*) Unappropriated profits in respect of (2) at credit, profit and loss account	4,128 78	
			104,128 78
	LIABILITIES TO THE PUBLIC.		
40.	Other liabilities to the public, viz.:—		
41.	(*a*) Costs of loans		23 18
	Total actual liabilities		104,151 96
	CONTINGENT LIABILITIES.		
44.	Claims against the Corporation not acknowledged as debts, viz.:—		
45.	(*a*) Amount at credit of sundry trusts accounts	24,110 22	
51.	(*c*) Trust Funds invested but not guaranteed:—		
	(1) Principal	7,875 00	
	(2) Interest	95 20	
	Total contingent liabilities	32,080 42	32,080 42
	Gross total liabilities, actual and contingent		136,232 38

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgages of land	100,322 91	
11. (*c*) Interest due or accrued on item 9 and not included therein	1,570 22	
		101,893 13
E.—*Cash.*		
32. (*b*) In bank		2,258 83
Total of assets owned beneficially by Corporation		104,151 96
II.—Assets not Owned Beneficially by Corporation but for which the Corporation is Accountable.		
B.—*As Trustee, Representative, Guardian, or Agent (Without Guarantee).*		
(*a*) Mortgage securities :—		
47. (i) Principal	7,875 00	
48. (ii) Interest due or accrued	95 20	
51. (*c*) Unsecured debts		
52. (*d*) Uninvested trust funds, cash in bank	24,110 22	
Total of Assets II	32,080 42	
		32,080 42
Grand total of Assets I and II		136,232 38

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Amount carried to capital account. — Permanent capital, including reserve. (Column 3.)	Total. (Column 4.)
I.—Received by the Corporation for its own use.			
B.—*Sums received wholly or partly on Capital Stock.*	$ c.	$ c.	$ c.
Item No.			
4. (*a*) Calls on joint stock permanent capital	.....	100,000 00	100,000 00
C.—*Receipts on account of Investments, Loans or Debts.*			
(*a*) On Mortgages of Realty:			
10. (i) Principal	4,325 00		
11. (ii) Interest	2,503 90		
(*b*) On other securities:			6,828 90
12. (i) Principal	20,661 39		
13. (ii) Interest or dividends	283 66		
			20,945 05
E.—*Miscellaneous.*			
18. (*a*) Commission, brokerage (or remuneration as corporate agent, trustee, etc.)	901 29	.....	901 29
G.—*Receipts from other sources, viz.* :—			
30. (*a*) Interest on bank balances	1,648 77		
(*b*) Amount to pay costs on loan	23 18		
			1,671 95
Totals	30,347 19	100,000 00	130,347 19

	Amount carried to earnings, maintenance or contingent account	Carried to capital account.	Total.
II.—Received as Corporate Trustee, Representative, Guardian or Agent in Trust.			
B.—*Received on Account of Investments, Loans or Debts.*	$ c.	$ c.	$ c.
34. (*a*) On mortgages: Principal, $4,080.45; interest, $446 17.	446 17	4,080 45	4,526 62
35. (*b*) On other securities: Principal, $19,699.28; interest, $503.65	503 65	19,699 28	20,202 93
36. (*c*) On unsecured debts: Principal, $3,293.62	.....	3,293 62	3,293 62
C.—*Receipts from Real Estate.*			
37. (*a*) Sales (not included in foregoing items)	.....	13,307 69	13,307 69
38. (*b*) Rents	152 75	.....	152 75
D.—*Receipts from Other Sources, viz.* :—			
39. (*a*) Personal effects, stock, implements, produce, etc.	.....	3,574 59	3,574 59
40. (*b*) Interest on bank balances, etc.	1,105 79	.....	1,105 79
Totals	2,208 36	43,955 63	46,163 99

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c.
A.—*Sums Loaned or Invested on Capital Account.*		
Item No. 1. (*a*) Loaned on Mortgages of Realty		104,647 91
(*b*) Loaned or invested in other securities, viz.:—		
2. (i) Debentures		10,661 39
3. (ii) Special bank deposit		10,000 00
D.—*Management Expenses (other than foregoing).*		
25. (*a*) Salaries and fees	1,013 70	
26. (*b*) Commission or brokerage, Company only	415 24	
28. (*d*) Stationery, postage, printing and advertising	879 02	
29. (*e*) Law costs	278 75	
31. (*g*) Travelling expenses	58 80	
32. (*h*) Registration fees	30 00	
Sundry management expenses	103 65	
		2,779 06
F.—*Balance.*		
(*b*) Cash in bank	2,258 83	2,258 83
Totals		130,347 19

	Amount carried to earnings, maintenance or contingent account.	Amount carried to capital account.	Total.
II.—Expended on Trust or Agency Account.	$ c.	$ c.	$ c.
A.—*Loaned or Invested on Capital Account.*			
42. (*a*) Loaned on Mortgages of Realty	7,875 00		7,875 00
B.—*Other Expenditures.*			
50. (*a*) Commission or remuneration paid for management of estate, trust or agency	13 29	888 00	901 29
51. (*b*) Rents, taxes and rates		159 21	159 21
52. (*c*) Debts or obligations wholly or partly paid: Principal, $11,418.14; interest, $1,700.00	1,700 13	11,418 14	13,118 27
C.—*Balance.*			
(*b*) Cash in bank	494 94	23,615 28	24,110 22
Totals	10,083 36	36,080 63	46,163 99

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

	$ c.
1. Amount of debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of debentures issued by the Corporation elsewhere which will mature in 1898. None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898.....	23 18
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	950 00
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgage of Realty, 5.15%; on other securities, 3.43%.	
7. Of the mortgages held by the Corporation, $100,322.91 is on realty situate in Ontario.	
8. Loans written off or transferred to real estate account during 1897. None.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897: No., none; amount, none.	
10. Aggregate market value of the land mortgaged to the Corporation, $209,250.	
11. How often are the securities held by the Corporation valued? Annually.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager, $10,000.	
13. When were the accounts of the Corporation last audited? To 31st December 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed); Geo. F. Jewell, F.C.A., and A. A. Booker, London, Ont	

THE OTTAWA TRUST AND DEPOSIT COMPANY (LIMITED).

Head Office, Ottawa, Ontario.

Incorporated on the 23rd January, 1896, by Letters Patent of Ontario, issued under the Ontario Joint Stock Companies' Letters Patent Act (R.S.O. 1887, c. 157). See also the Ontario Trust Companies' Act (R.S.O. 1897, c. 206), and the Loan Corporations Act (R S.O. 1897, c. 205).

Annual Statement

Of the condition and affairs of the Ottawa Trust and Deposit Company (Limited), of Ottawa, Ontario, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is on the corner of Sparks and Elgin streets, in the City of Ottawa, in the Province of Ontario.

The Board is constituted of twenty directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Alexander Fraser	President	Ottawa, Ont	20th January, 1897	19th January, 1898
George P. Brophy	1st Vice-Pres.	"	" 1897	" 1898
Warren Y. Soper	2nd Vice-Pres.	"	" 1897	" 1898
Clifford A. Douglas	Director	"	" 1897	" 1898
S. H. Fleming	Director	"	" 1897	" 1898
William Scott	Director	"	" 1897	" 1898
John I. McCraken	Director	"	" 1897	" 1898
Peter Whelen	Director	"	" 1897	" 1898
John W. McRae	Director	"	" 1897	" 1898
George Goodwin	Director	"	14th April 1897	" 1898
W. D. Hogg	Director	"	" 1897	" 1898
Thomas Workman	Director	"	" 1897	" 1898
Alexander H. Edwards	Director	Carleton Place	" 1897	" 1898
J. H. Francis	Director	Pakenham	" 1897	" 1898
W. H. Comstock	Director	Brockville	" 1897	" 1898
H. W. Chamberlain	Sec.-Treas	Ottawa	30th January, 1897	" 1898

A. Permanent capital stock : Total amount authorized, $500,000 ; total amount subscribed, $404,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(*b*) *Fixed and Permanent Capital Stock created by virtue of Joint Stock Companies' Acts or Private Acts.*

Last call made: date, November 10th, 1896; rate, 25 per cent.; gross amount, $101,000. Amount paid thereon, $101,000.

Description.	Number of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.	Total amount remaining uncalled.
		$	$	$	$
2. 25 per cent. called.....	4,040	100	404,000	101,000	303,000
Totals.....	4,040	.....	404,000	101,000	303,000

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

DR.

		$ cts.	$ cts.
	CAPITAL LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No.	B.—*Permanent Capital Stock or Shares.*		
	(*b*) Ordinary Joint Stock Capital, 25 per cent. called: total called, $101,000; total paid thereon	101,000 00	
5.	(*c*) Unappropriated profits in respect of (2) or (3)..... ...	708 94	
			101,708 94
	LIABILITIES TO THE PUBLIC.		
38.	Due on bills payable other than (37) (including interest due or accrued).....	13,551 93	
40.	Other liabilities to the public, viz.:—		
41.	(a) Outstanding accounts	446 50	
42.	(b) Mortgage on building, $70,000, interest, $1,591.78.....	71,591 78	
			85,590 21
	Total actual liabilities	187,229 15	
			187,299 15
	CONTINGENT LIABILITIES.		
51.	(*c*) Trust funds uninvested but not guaranteed:—		
52.	(1) Principal	51,602 50	
53.	(2) Interest	1,331 99	
54.	(*d*) Trust funds uninvested not bearing interest and not guaranteed	4,840 50	
	Total contingent liabilities.....	57,774 99	57,774 99
	Gross total liabilities, actual and contingent.....	.....	245,074 14

Balance Sheet as at 31st December, 1897.

Cr.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
A.—*Immovable property owned beneficially by Corporation.*		
1. (*a*) Office premises situate as follows :		
2. (i) At Ottawa held in freehold		132,574 17
D.—*Unsecured debts.*		
27. (*a*) Rental accrued and unpaid		1,403 97
E.—*Cash.*		
31. (*a*) On hand	21 55	
32. (*b*) In bank	34,532 34	
		34,553 89
F.—*Assets not Hereinbefore Mentioned.*		
37. (*a*) Vaults and office furniture	16,516 77	
38. (*b*) Organization expenses	1,659 10	
39. (*c*) Stationery account	475 00	
40. (*d*) Insurance premiums paid in advance	116 25	
		18,767 12
Total of assets owned beneficially by Corporation		187,299 15
II.—Assets not owned beneficially by Corporation but for which the Corporation is accountable.		
B.—*As trustee, representative, guardian, or agent (without guarantee).*		
(*a*) Mortgage securities :		
47. (i) Principal	36,450 00	
48. (ii) Interest due and accrued	520 63	
(*b*) Other securities :		
49. (i) Principal	15,152 50	
52. (*d*) Uninvested trust funds	5,651 86	
Total of assets II	57,774 99	57,774 99
Gross total of assets I. and II		245,074 14

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	$ c.	$ c.
I.—Received by the Corporation for its own use.		
Item No. A.—*Balances from 31st December, 1896.*		
(*b*) Cash (not already shown under (1)):		
3. (ii) In bank	38,365 37	38,365 37
D.—*Receipts from real estate owned beneficially by Corporation.*		
17. (*b*) Rents	9,591 86	9,591 86
E.—*Miscellaneous.*		
18. (*a*) Commission, brokerage (or remuneration as corporate agent, trustee, etc.)	1,765 86	1,765 86
F.—*Borrowed Money.*		
25. (*a*) Bank or other advances, discounts or overdrafts	13,500 00	13,500 00
G.—*Receipts from other sources, viz.:*		
30. (*a*) Rental of vaults	500 15	500 15
Totals		63,723 24
II.—Received as Corporate Trustee, Representative, Guardian or Agent in Trust.		
B.—*Received on account of investments, loans or debts.*		
34. (*a*) On mortgages: Principal, $3,300; interest, $531.39	3,831 39	
35. (*b*) On other securities: Principal, $1,045.94; interest, $601.52	1,737 50	
36. (*c*) On unsecured debts: Principal, $299.75; interest, $18.63	318 38	5,887 27
C.—*Receipts from real estate.*		
37. (*a*) Sales (not included in foregoing items)	24,735 00	
38. (*b*) Rents	577 15	25,312 15
D.—*Receipts from other sources, viz.:*		
39. (*a*) Sale of personalty, balance in bank and sundries	41,074 30	
40. (*b*) Life assurance policies paid	45,836 20	
41. (*c*) Interest from bank	319 33	87,229 83
Totals		118,429 25

Cash Account.

Expenditure for the year ending 31st December, 1897.

		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I.—Expended on Corporation Account.	$ c.	$ c.
Item No.	A.—*Sums Loaned or Invested on Capital Account.*		
5.	(iv.) Office furniture	1,425 02	
6.	(c) Real estate purchased—balance	10,376 64	
7.	(d) Incumbrances on realty paid off, besides due on vaults	4,701 00	
			16,502 66
	C.—*Borrowed Money (other than foregoing) or Interest Thereon Paid, viz.:*		
18.	(a) Bank account (principal and interest)	124 25	
19.	(b) Interest on mortgage on building	3,062 50	
			3,186 75
	D.—*Management Expenses (other than foregoing).*		
25.	(a) Salaries and fees	1,611 50	
28.	(d) Stationery, postage, printing and advertising	768 59	
30.	(f) Fuel, rent, taxes (other than in 32), rates, caretaker, electric power, etc	5,928 86	
			8,308 95
	E.—*Other Expenditures, viz.:*		
33.	(a) Vault expenses	38 50	
34.	(b) Organization expenses	466 10	
35.	(c) Stationery	216 39	
36.	(d) Outstanding accounts, 1896	450 00	
			1,170 99
	F.—*Balance.*		
37.	(a) Cash on hand $ 21 55		
	(b) Cash in various banks, as follows 34,532 34		
			34,553 89
	Totals	29,169 35	63,723 24

		Amount carried to earnings, maintenance or contingent account.	Total.
	II.—Expended on Trust or Agency Account.	$ c.	$
	A.—*Loaned or Invested on Capital Account.*		
42.	(a) Loaned on Mortgages of Realty	39,750 00	
	(b) Loaned or invested on or in other securities, viz.:—		
43.	(i) Stocks of corporations	15,182 44	
44.	(ii) Dominion of Canada 4% stock	1,016 00	
	(d) Incumbrances on Realty paid off, viz.:—		55,948 44
48.	(i) Principal	4,850 00	
49.	(ii) Interest	583 64	
	B.—*Other Expenditures.*		
50.	(a) Commission or remuneration paid for management of Estate, Trust or Agency (including item 26)	1,152 39	
51.	(b) Rents, taxes and rates	940 47	
52.	(c) Debts or obligations wholly or partly paid: Principal, $30,279.33	30,279 33	
53.	(d) Legacies or beneficiaries under Trusts Deeds	18,843 12	
	Commission for sale of real estate, $155; brokerage $25	180 00	
			56,828 95
	C.—*Balance.*		
54.	(b) Cash in bank		5,651 86
	Totals	12,777 39	118,429 25

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

——	$ c.
5. Average rate of interest per annum paid by the Corporation during 1897 on deposits, 4.7%.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5.47%; on other securities, 6.73%.	
7. Of the mortgages held by the Corporation $36,450.00 is on realty situate in Ontario.	
10. Aggregate market value of the land mortgaged to the Corporation, $53,700.	
11. How often are the securities held by the Corporation valued? Quarterly.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Secretary-Treasurer, $50,000.	
13. When were the accounts of the Corporation last audited? 5th January, 1898.	
14. Names and address of the auditors respectively for 1897 and 1898: J. S. Chamberlain, Ottawa, Ont.; J. H. Thompson, Ottawa, Ont.	

THE TORONTO GENERAL TRUSTS COMPANY.

Head Office, Toronto.

Constating Instruments.

1872 —35 V. c. 83 (O)—Special Act of Incorporation.

1882.—Order in Council of Ontario (10th March, 1882) approving of the Company as a Trusts Company.

1885.—Letters Patent of Ontario, dated 7th January, 1885, (Lib. 4, G. S, p. 136), extending the powers of the Company.

1887.—Supplementary Letters Patent of Ontario, dated 15th July, 1887, (Lib. 4, G. S, p. 292), increasing the capital stock of the Company to $1,000,000.

1888.—Supplementary Letters Patent of Ontario, dated 2nd June, 1888, (Lib. 5, G. S, p. 129), respecting quorum of board of directors.

1889.—Supplementary Letters Patent of Ontario, dated 1st May, 1889, (Lib. 7, G. S, p. 30), empowering Company to hold real estate for purposes of the Company's business.

1897, 13th December. Supplementary Letters Patent of Ontario empowering the Company to act as Receiver and Liquidator.

Annual Statement

Of the condition and affairs of The Toronto General Trusts Company, of Toronto, Ont., at the 31st March, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 59 Yonge Street, in the City of Toronto, in the Province of Ontario.

The Board is constituted of eighteen directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st March, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
John Hoskin, Q.C., LL.D.	President	Toronto	31st March, 1897..	31st March, 1898.
E. A. Meredith, LL.D. } W. H. Beatty ..... }	Vice-Presidents..	"	" ..	"
Hon. Sir Frank Smith ...	Director.....	"	" ..	"
Hon. Geo. A. Cox	Director.....	"	" ..	"
W. R. Brock	Director.....	"	" ..	"
B. Homer Dixon.....	Director.....	"	" ..	"
George Gooderham	Director.....	"	" ..	"
Æmilius Irving, Q.C	Director..... .	"	" ..	"
A. B. Lee.....	Director.			
T. Sutherland Stayner...	Director.			
Samuel Alcorn	Director	"	" ..	"
J. J. Foy, Q.C	Trustee, Director			
H. S. Howland.....	Trustee, Director			
Robert Jaffray	Director.			
J. G. Scott, Q.C.....	Director.			
J. W. Langmuir...	Managing Director.			

A. Permanent capital stock: Total amount authorized, $1,000,000; total amount subscribed, $1,000,000, as more particularly set out in Schedule A hereto.

SCHEDULE A.

(b).—Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or Private Acts.

Last call made—Date, 4th June, 1895; rate, 2½%; gross amount, $25,000; amount paid thereon, $25 000.

—	No. of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.
		$	$ c.	$ c.
2. 25 per cent. called	20,000	50	1,000,000 00	250,000 00
Totals	20,000		1,000,000 00	250,000 00

LIST OF SHAREHOLDERS AS AT 31ST DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST MARCH, 1897.

DR. *Capital and Liabilities.*

—	$ c.	$ c.
Item CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
No. A.—*Permanent Capital Stock or Shares.*		
3. (*c*) Ordinary joint stock capital, 25% called: Total called, $250,000; total paid thereon	250,000 00	
4. (*d*) Dividends declared in respect of (3), but not yet paid	10,000 00	
5. (*e*) Unappropriated profits in respect of (3)	5,539 09	
6. (*f*) Reserve Fund in respect of (3)	250,000 00	
7. (*g*) Contingent fund in respect of (3)	44,202 00	
C.—*Liabilities to Stockholders or Shareholders other than as already shown under A or B, viz.*		
24. Directors' compensation	3,257 00	
		562,998 29
LIABILITIES TO THE PUBLIC.		
39. Due on loans in process of completion or to pay assumed mortgages.	535 92	
40. Other liabilities to the public, viz.:		
41. (a) Sundry creditors	958 95	
		1,494 87
Total actual liabilities	564,493 16	
CONTINGENT LIABILITIES		
44. Claims against the Corporation not acknowledged as debts, viz.:		
45. (a) Interest reserved	2,000 00	
48. Money for which the Corporation is contingently liable, viz.:		
49. (a) Principal guaranteed { Court account $1,700,299 73; Guaranteed agencies 589,634 41 }	2,289,934 14	
51. (c) Trust funds invested but not guaranteed:		
52. (1) Principal { In mortgages $2,301,632 92; In debentures 538,025 12 }	2,839,658 04	
53. (2) Interest	41,444 14	
54. (d) Trust funds uninvested and not guaranteed { Corpus $339,127 09; Revenue 45,959 53 }	385,086 62	
		5,558,122 94
Total contingent liabilities	5,558,122 94	
Gross total liabilities, actual and contingent		6,122,616 10

Balance Sheet as at 31st March, 1897.

Cr.

		$ c.	$ c.
	I.—Assets of which the Corporation is the Beneficial Owner.		
	A.—Immovable Property Owned Beneficially by Corporation.		
1. (*a*)	Office premises situate as follows :—		
2.	(i) At 59 Yonge street, Toronto, held in freehold	130,000 00	
5. (*b*)	Freehold land (including buildings) other than foregoing	136,334 12	
			266,334 12
	B.—Debts secured by Mortgages of Land.		
9. (*a*)	Debts (other than item 10) secured by mortgages of land	292,268 17	
10. (*b*)	Debts secured by mortgaged land held for sale	26,265 97	
11. (*c*)	Interest due or accrued on items 9 and 10 and not included therein	9,648 84	
(*cc*)	Interest due or accrued on mortgages other than in 9 and 10	53,726 51	
12. (*d*)	Of the debts mentioned in items 9, 10 and 11 the sum of $2,000 is due by directors or officers of the Corporation. (*Not extended.*)		381,909 49
	E.—Cash.		
31. (*a*)	On hand	1,028 41	
32. (*b*)	In bank	16,910 25	
			17,938 66
	F.—Assets not Hereinbefore Mentioned.		
37. (*a*)	Office furniture	1,207 86	
38. (*b*)	Building repairs	3,850 00	
39. (*c*)	Solicitor's account in suspense	3,890 06	
40. (*d*)	Sundry debtors	1,767 47	
			10,715 39
	Total of assets owned beneficially by Corporation		676,897 66
	II.—Assets not Owned Beneficially by Corporation but for which the Corporation is Accountable.		
	A.—As Guarantor.		
	(*a*) Mortgage securities :—		
43.	(i) Principal . { Court account $1,714,299.73; Guaranteed agency 589,634.41	2,303,934 14	2,303,934 14
	B.—As Trustee, Representative, Guardian, or Agent (Without Guarantee.)		
	(*a*) Mortgage securities :—		
47.	(i) Principal	2,301,632 92	
48.	(ii) Interest due and accrued	41,444 14	
	(iii) Advances to borrowers	1,575 02	
	(*b*) Other securities :—		
49.	(i) Principal . { Debentures $538,025 12; Premium debentures 22,498.52	560,523 64	
51. (*c*)	Unsecured debts	33 97	
52. (*d*)	Uninvested trust and agency funds	242 00	
(*e*)	Trust and agency funds in chartered bank bearing interest	236,332 61	
			3,141,784 30
	Total of assets II	5,445,718 44	
	Gross total of assets I, and II		6,122,616 10

Cash Account.

Receipts for the year ending 31st March, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column a.)	Profit and loss Total. (Column 3.)
	I.—Received by the Corporation for its own use.	$ c.	$ c.
	A.—*Balances from 31st March, 1896.*		
1.	(a) Capital account		
	(b) Cash (not already shown under (1)).		
2.	(i) On hand		1,919 20
3.	(ii) In bank		9,837 19
	B.—*Sums received wholly or partly on Capital Stock.*		
4.	(a) Calls on joint stock permanent capital		01
	C.—*Receipts on account of Investments, Loans or Debts.*		
	(a) On Mortgages of Realty:—		
10.	(i) Principal		35,242 80
11.	(ii) Interest	15,308 41	15,308 41
	(b) On other securities:—		
12.	(i) Principal		1,900 00
13.	(ii) Interest or dividends	15 79	15 79
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*		
16.	(a) Sales (not included in any of foregoing items)		12,350 00
17.	(b) Rents	6,627 02	6,627 02
	E.—*Miscellaneous.*		
18.	(a) Commission, brokerage (or remuneration as corporate agent), trustee, etc.)	50,473 38	50,473 38
	G.—*Receipts from other sources, viz:*		
30.	(a) Paid on advances to borrowers		47,711 95
	(b) Interest account	4,499 36	4,499 36
	(c) Suspense account		20 63
	Totals	76,923 96	
	II.—Received as Corporate Trustee, Representative, Guardian or Agent in Trust.		
	A.—*Balances from 31st March, 1896.*		
	(b) Cash (not included in 31):		
32.	(i) On hand		135 00
33.	(ii) In bank		70,409 89
	B.—*Received on Account of Investments, Loans or Debts.*		
34.	(a) On mortgages: principal, $661,064.35; interest, $287,049.21		948,113 56
35.	(b) On other securities: principal, $167,298.09; interest, $		167,298 09
	C.—*Receipts from Real Estate.*		
37.	(a) Sales (not included in foregoing items)		41,378 08
38.	(b) Rents		96,423 55
	D.—*Receipts from Other Sources, viz.:*		
39.	(a) Moneys received for investment		202,300 00
40.	(b) Sundry realizations, collections, etc		632,518 44
41.	(c) Advances repaid by mortgagors		2,791 53
	Totals		2,347,273 88

Cash Account.

Expenditure for the year ending 31st March, 1897.

Item No.		Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
	I.—Expended on Corporation Account.		
	A.—*Sums Loaned or Invested on Capital Account.*	$ c.	$ c.
1.	(a) Loaned on Mortgages of Realty		64,080 64
	(b) Loaned or invested in other securities, viz.:		
2.	(i) Debentures		1,800 00
	(c) Insurance or taxes advanced on property mortgaged to the Corporation		50,854 51
	B.—*Expended on Stock Account.*		
8.	Dividends paid on permanent stock	18,750 00	18,750 00
	D.—*Management Expenses (other than foregoing).*		
25.	(a) Salaries and fees	32,437 45	
26.	(b) Commission or brokerage	965 80	
28.	(d) Stationery, postage, printing and advertising	3,553 20	
30.	(f) Fuel, rent, taxes (other than in 32) and rates	4,927 98	
31.	(g) Travelling expenses	1,345 15	
32.	(h) Sundry expenses	1,454 97	
			44,684 55
	E.—*Other Expenditures, viz.:*		
33.	(a) Solicitors fees in suspense		785 26
	F.—*Balance.*		
37.	(a) Cash on hand $1,028 41		
	(b) Cash in bank 16,910 25		
			17,938 66
	Totals	63,434 55	

Item No.		Total.
	II.—Expended on Trust or Agency Account.	
	A.—*Loaned or Invested on Capital Account.*	$ c.
42.	(a) Loaned on Mortgages of Realty	415,505 08
	(b) Loaned or invested on or in other securities, viz.:—	
43.	(i) Debentures	99,191 79
	B.—*Other Expenditures.*	
50.	(a) Commission or remuneration paid for management of estate, trust or agency (including item 26)	47,396 19
51.	(b) Rents, taxes and rates	
52.	(c) Debts or obligations wholly or partly paid: Principal, $; Interest	1,345,150 19
52.	(d) Sundry returns, payments and distributions	
	(e) Advances on account of mortgages	4,562 40
	C.—*Balance.*	
54.	(a) Cash on hand $ 242 00	
	(b) Cash in various banks 236,332 61	
		236,574 61
	Totals	2,347,273 88

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST MARCH, 1897.

	$ c.
3. Amount of other existing obligations of the Corporation which will mature in 12 months	5,281 26
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 12 months	128,455 00
6. Average rate of interest per annum received by the Corporation during year on Mortgages of Realty, 5 65 per cent.	
7. Of the mortgages held by the Corporation, $411,442.24 is on realty situate in Ontario.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897—number, 11; amount $22,600.	
11. How often are the securities held by the Corporation valued? In case of doubtful loans annually or oftener.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Managing director, $10,000; assistant manager, $2,000; chief clerk, $2,000; cashier, $2,500.	
13. When were the accounts of the Corporation last audited? As at 31st March, 1898.	
14. Names and address of the auditors respectively for 1898: Geo. Macbeth, Toronto, Ont.; R. F. Spence, Toronto, Ont.	

THE TRUSTS CORPORATION OF ONTARIO.

Head Office, Toronto, Ontario.

Incorporated 27th December, 1888, by Letters Patent of Ontario, issued under the Ontario Joint Stock Companies' Letters Patent Act (R. S. O. 1887, c. 157). See also *The Ontario Trusts Companies' Act* (R. S. O. 1897, c. 206); and *The Loan Corporations Act* (R. S. O. 1897, c. 205)

Annual Statement

Of the condition and affairs of the Trusts Corporation of Ontario, of Toronto, at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province

The head office of the Corporation is at No. 19-21 King street west, in the City of Toronto, in the Province of Ontario.

The Board is constituted of eighteen directors holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
Hon. J. C. Aikins, P.C..	President	Toronto, Ontario...		
Hon. S. C. Wood	Vice-President.	"		
J. L. Blaikie	Director	"		
Wm. Cook.	Director	"		
W. C. Edwards, M.P ...	Director	"		
Hon. J. R. Gowan.....	Director	"		
Hon. J. M. Gibson.	Director	"		
Wm. Hendrie	Director	"		
J. J. Kenny	Director	"		
M. Leggatt.....	Director	"		
Thomas Long	Director	"		
Alex. Manning.....	Director	"		
W. D. Matthews.....	Director	"		
Hon. P. McLaren	Director	"		
E. B. Osler, M.P.	Director	"		
B. B. Osler, Q C.....	Director	"		
Hugh Ryan	Director	"		
A. E. Plummer	Manager	"		

A. Permanent capital stock: total amount authorized, $1,000,000; total amount subscribed, $1,000,000, as more particularly set out in Schedule A hereto.

Last call made: Date 2nd July, 1895; rate per cent., ten; gross amount, $100,000; amount paid thereon. $97,850.

SCHEDULE A.

(b).—Fixed and permanent capital stock created by virtue of Joint Stock Companies' Acts or Private Acts.

Description.	No. of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.	Total amount unpaid on calls.
		$	$ c	$ c.	$ c.
2. 20 per cent. called	10,000	100	1,000,000 00	197,850 00	2,150 00
Totals	10,000	.....	1,000,000 00	197,850 00	2,150 00

LIST OF SHAREHOLDERS AS AT 31st DECEMBER, 1897.

(Not printed.)

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

Capital and Liabilities

DR.

	$ c.	$ c.
CAPITAL (LIABILITIES TO STOCKHOLDERS OR SHAREHOLDERS).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (*a*) Ordinary joint stock capital fully called: total called, $200,000; total paid thereon	197,850 00	
6. (*f*) Reserve Fund in respect of (1)	27,736 12	
7. (*g*) Contingent fund in respect of (1)	9,102 00	
		234,688 12
LIABILITIES TO THE PUBLIC.—None.		
CONTINGENT LIABILITIES.		
48. Money for which the Corporation is contingently liable, viz.:—		
49. (*a*) Principal guaranteed	230,172 88	
51. (*c*) Trust Funds invested but not guaranteed:—		
52. (1) Principal	774,406 26	
54. (*d*) Trust Funds uninvested and bearing banks interest and not guaranteed	111,295 43	
		1,115,874 57
Total contingent liabilities	1,115,874 57	
Gross total liabilities, actual and contingent		1,350,562 69

BALANCE SHEET AS AT 31ST DECEMBER, 1897.

CR.

		$ c.	$ c.
	I.—ASSETS OF WHICH THE CORPORATION IS THE BENEFICIAL OWNER.		
	A.—*Immovable Property Owned Beneficially by Corporation.*		
7.	(*d*) Vaults and fittings	23,655 86	23,655 86
	B.—*Debts secured by Mortgages of Land.*		
9.	(*a*) Debts (other than item 10) secured by mortgages of land	9,000 00	
11.	(*c*) Interest due or accrued on items 9, 23, 24, 43 and 47, and not included therein	21,730 29	30,730 29
	C.—*Debts not above enumerated for which the Corporation holds Securities as follows:*		
22.	(*j*) Debts secured by stocks and bonds	128,979 62	
23.	(*k*) Debts secured by insurance policies	59,616 83	188,596 45
	E.—*Cash.*		
32.	(*b*) In bank		128,216 93
	F.—*Assets not Hereinbefore Mentioned.*		
37.	(*a*) Rentals and storages		2,846 90
	Total of assets owned beneficially by Corporation		
	II.—ASSETS NOT OWNED BENEFICIALLY BY CORPORATION BUT FOR WHICH THE CORPORATION IS ACCOUNTABLE.		
	A.—*As Guarantor.*		
	(*a*) Mortgage securities:—		
43.	(i) Principal	202,110 00	202,110 00
	B.—*As Trustee, Representative, Guardian or Agent (Without Guarantee).*		
	(*a*) Mortgage securities:—		
47.	(i) Principal	774,406 26	774,406 26
	Total Assets of II	976,516 26	
	In addition to the securities already mentioned in the foregoing statement the Corporation holds mortgages and other securities of the estimated value of $1,600,000 original investments received with estates and trusts which came into the hands of the Corporation (not extended).		
	Gross total of Assets I. and II		1,350,562 69

Cash Account.

Receipts for the year ending 31st December, 1897.

Item No.		Total. (Column 4.)
	I.—Received by the Corporation for its own use.	$ c.
	A.—*Balance from 31st December, 1896.*	
1.	(a) Capital account	1,450 00
	(b) Cash (not already shown under (1)):—	
3.	(ii) In bank	61,957 95
	C.—*Receipts on Account of Investments, Loans or Debts.*	
	(a) On Mortgages of Realty:—	
10.	(i) Principal	356,033 64
	(b) On other securities:—	
13.	(ii) Interest or dividends	15,117 25
	D.—*Receipts from Real Estate Owned Beneficially by Corporation.*	
16.	(a) Sales (not included in any of foregoing items)	
17.	(b) Rents	
	E.—*Miscellaneous.*	
18.	(a) Commission, brokerage (or remuneration as corporate agent, trustee, etc.)	16,716 44
	G.—*Receipts from Other Sources, viz.*:—	
30.	(a) Vault rentals	2,515 70
	II.—Received as Corporate Trustee, Representative, Guardian or Agent in Trust.	
	B.—*Received on Account of Investments, Loans or Debts.*	
34.	(a) On mortgages	172,952 13
	Totals	626,743 11

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1.)	Total. (Column 4.)
I.—Expended on Corporation Account.	$ c.	$ c.
Item No. A.—*Sums Loaned or Invested on Capital Account.*		
(*b*) Loaned or invested in securities		354,800 00
B.—*Expended on Stock Account.*		
8. Dividends paid on permanent stock. (*Extend into Column 1.*)		11,847 00
D.—*Management Expenses (other than foregoing).*		
25. (*a*) Salaries and fees	12,254 90	
26. (*b*) Commission or brokerage	247 00	
28. (*d*) Stationery, postage, printing and advertising	3,032 24	
30. (*f*) Fuel, rent, taxes (other than in 32) and rates	3,755 19	
		19,289 33
F.—*Balance.*		
(*b*) Cash in bank		16,921 50
II.—Expended on Trust or Agency Account.		
A.—*Loaned or Invested on Capital Account.*		
(*b*) Loaned or invested on or in securities		112,589 85
C.—*Balance.*		
(*b*) Cash in bank		111,295 43
Totals		626,743 11

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER 1897

	$ c.
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898, $107,490.	
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty, 5¾ %; on other securities, 4¾ %.	
7. Of the mortgages held by the Corporation $940,516.26 is on realty situate in Ontario, and $45,000 is on realty situate elsewhere.	
10. Aggregate market value of the land mortgaged to the Corporation, estimated $2,133,000.	
12. (a) What officers of the Corporation are under bond and for what sum respectively? Manager, $10,000, Accountant, $5,000, and nearly all other officers, $9,000.	
13. When were the accounts of the Corporation last audited? 31st December, 1897.	
14. Names and address of the auditors respectively for 1897 and 1898 (if appointed): Maitland Young, Hamilton, Ont.; John M. Martin, Toronto	

THE TRUSTS AND GUARANTEE COMPANY (LIMITED).

Head Office, Toronto.

Incorporated on the 24th February, 1897, by Letters Patent of Ontario issued under R. S. O. 1897, c. 191. See also *The Ontario Trusts Company Act* (R. S. O. 1897, c. 206) and the Loan Corporations Act (R. S. O. 1897, c. 205).

Annual Statement

Of the condition and affairs of The Trusts and Guarantee Company (Limited), of Toronto, Ont., at the 31st December, 1897, and for the year ending on that day, made to the Registrar of Loan Corporations for the Province of Ontario, pursuant to the laws of the said Province.

The head office of the Corporation is at No. 54 Adelaide street east, in the City of Toronto, in the Province of Ontario.

The Board is constituted of twenty-seven directors, holding office for one year.

The directors and chief executive officers of the Corporation at the 31st December, 1897, were as follows :

Names of directors and chief executive officers.	Designation of office.	Address.	Term of office.	
			Began (date).	Will end (date).
J. R. Stratton, M.P.P.	President	Peterboro'	10th March, 1897	14th March, 1898.
D. W. Karn	Vice-President	Woodstock	"	"
C. Kloepfer, M.P.	Vice-President	Guelph	"	"
T. S. Hobbs, M.P.P.	Director	London	"	"
W. J. McKee, M.P.P.	Director	Windsor	"	"
Wm. German, M.P.P.	Director	Welland	"	"
C. B. Heyd, M.P.	Director	Brantford	"	"
Hon. Geo E. Foster, M.P.	Director	Ottawa	"	"
Peter Hamilton	Director	Peterboro'	"	"
Alfred McDougall	Director	Toronto	"	"
Wm. Buckingham	Director	Stratford	"	"
W. C. Matthews	Director	Toronto	"	"
A. W. Campbell	Director	"	"	"
F. C. Taylor	Director	Lindsay	"	"
W. H. Meldrum	Director	Peterboro'	"	"
Richard Hall	Director	"	"	"
F. M. Holland	Director	Toronto	"	"
A. F. Rutter	Director	"	"	"
G. G. S. Lindsay	Director	"	"	"
Robert Davies	Director	"	"	"
A. C. Macdonell	Director	"	"	"
A. M. McKinnon	Director	Guelph	"	"
W. A. Stratton	Director	Peterboro'	"	"
A. L. Davis	Director	"	"	"
J. G. Wallace	Director	Woodstock	"	"
J. V. Teetzel, Q.C.	Director	Hamilton	"	"
T. P. Coffee	Manager	Toronto.		

A. Permanent capital stock: total amount authorized, $2,000,000; total amount subscribed, $522,900, as more particularly set out in Schedule A hereto.

Schedule A.

(b)—Fixed and permanent capital stock created by virtue of Joint Stock Companies Act or Private Acts.

Description.	No. of shares.	Par value of shares.	Total amount held.	Total amount paid thereon.	Total remaining unpaid on calls.
		$	$ c.	$ c.	$ c.
1. Fully called	2,314	50	115,700 00	112,401 00	2,299 00
2. 10 per cent	8,144	50	407,200 00	40,420 00	300 00
Totals	10,458	.....	522,900 00	152,821 00	2,599 00

List of Shareholders as at 31st December, 1897.

(Not printed.)

Balance Sheet as at 31st December, 1897.

Capital and Liabilities

Dr.

	$ c.	$ c.
Capital (Liabilities to Stockholders or Shareholders).		
Item No. A.—*Permanent Capital Stock or Shares.*		
1. (a) Ordinary joint stock capital fully called: total called, $115,700; total paid thereon	112,401 00	
2. (b) Ordinary joint stock capital 10% called: total called, $40,720; total paid thereon	40,420 00	
5. (e) Unappropriated profits in respect of (1), (2)	2,858 82	
Total actual liabilities		155,679 82
Contingent Liabilities.		
54. (d) Trust funds uninvested not bearing interest and not guaranteed	8,921 39	
Total contingent liabilities		8,921 39
Gross total liabilities, actual and contingent		164,601 21

Balance Sheet as at 31st December, 1897.

	$ c.	$ c.
I.—Assets of which the Corporation is the Beneficial Owner.		
B.—*Debts Secured by Mortgages of Land.*		
9. (*a*) Debts (other than item 10) secured by mortgage of land	91,366 35	
11. (*c*) Interest due or accrued on item 9 and not included therein	1,336 94	92,703 29
C.—*Debts not above Enumerated for which the Corporation Holds Securities as follows:*		
14. (*b*) Debts secured by municipal bonds or debentures	46,060 00	
22. (*j*) Debts secured by other Companies' stock	200 00	
26. (*n*) Interest due or accrued on items 14 to 25 and not included therein	673 47	46,933 47
D.—*Unsecured Debts.*		
27. (*a*) Due by agents		150 00
E.—*Cash.*		
31. (*a*) On hand	2,710 84	
32. (*b*) In bank	555 28	3,266 12
F.—*Assets not hereinbefore mentioned.*		
37. (*a*) Charter organization, furniture, stationery, etc		12,626 94
Total of assets owned beneficially by Corporation		155,679 82
II.—Assets not Owned Beneficially by Corporation but for which the Corporation is Accountable.		
B.—*As Trustee, Representative, Guardian, or Agent (without guarantee.)*		
52. (*d*) Uninvested trust funds	8,921 39	
Total of assets II	8,921 39	8,921 39
Gross total of assets I, and II		164,601 21

Cash Account.

Receipts for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1).	Amount carried to capital account — Permanent capital, including reserve. Column 3.)	Total. Column 4.
I.—Received by the Corporation for its own use.	$ c.	$ c.	$ c.
B.—*Sums Received Wholly or Partly on Capital Stock.*			
Item No. 4. (*a*) Calls on joint stock permanent capital		152,821 00	152,821 00
C.—*Receipts on Account of Investments, Loans or Debts.*			
(*a*) On Mortgages of Realty :—			
11. (ii) Interest	688 73		688 73
(*b*) On other Securities :—			
12. (i) Principal—special loans		450 00	450 00
13. (ii) Interest or dividends	159 68		159 68
Totals	848 41	153,271 00	154,119 41

	Total.
II.—Received as Corporate Trustee, Representative, Guardian or Agent in Trust.	$ c.
D.—*Receipts from other sources, viz.:*	
39. (*a*) Estates for investment	8,921 39
Totals	8,921 39

Cash Account.

Expenditure for the year ending 31st December, 1897.

	Amount carried to earnings, maintenance or contingent account. (Column 1).	Amount carried to capital account. Permanent capital, including reserve. (Column 3.)	Total. (Column 4).
I.—Expended on Corporation Account.	$ c.	$ c.	$ c.
A.—*Sums Loaned or Invested on Capital Account.*			
Item No.			
1. (*a*) Loaned on Mortgages of Realty		91,366 35	
(*b*) Loaned or invested in other securities, viz.:			
2. (i) Other Company's stock		650 00	
3. (ii) Debentures		46,060 00	
			138,076 35
D.—*Management Expenses (other than foregoing).*			
27. (*c*) Advances to Agents	150 00		150 00
E.—*Other Expenditures.*			
33. (*a*)	12,626 94		12,626 94
F.—*Balance.*			
37. (*a*) Cash on hand $2,710 84			
(*b*) Cash in various banks 555 28	3,266 12		3,266 12
Totals			154,119 41
II.—Expended on Trust or Agency Account.			
C.—*Balance.*			
(*b*) Cash in banks			8,921 39
Totals			8,921 39

MISCELLANEOUS STATEMENT FOR THE YEAR ENDING 31ST DECEMBER, 1897.

—	$ c.
1. Amount of Debentures issued by the Corporation in Canada which will mature in 1898. None.	
2. Amount of Debentures issued by the Corporation elsewhere which will mature in 1898 None.	
3. Amount of other existing obligations of the Corporation which will mature in 1898. None.	
4. Amount of securities held by the Corporation which will mature and become payable to the Corporation in 1898	200 00
6. Average rate of interest per annum received by the Corporation during 1897 on Mortgages of Realty? 5½%; on other securities, 6%.	
7. Of the mortgages held by the Corporation $87,866.35 is on realty situate in Ontario, and $3,500 is on realty situate elsewhere.	
8. Loans written off or transferred to real estate account during 1897. None.	
9. Number and aggregate amount of mortgages upon which compulsory proceedings have been taken by the Corporation in 1897? No.; none; amount, none.	
10. Aggregate market value of the land mortgaged to the Corporation, $205,392.	
11. How often are the securities held by the Corporation valued? All newly taken.	
13. When were the accounts of the Corporation last audited? First audit.	

COMPARATIVE TABLES

SHOWING LIABILITIES, ASSETS, ETC.

COMPARATIVE

SHOWING LIABILITIES,

	Loan Companies having only permanent stock.		Loan Compan minating stock manent stock, minating
	1897.	1896.	1897.
Capital Stock.	$ c.	$ c.	$ c.
Capital authorized (permanent)	109,081,022 33	82,145,522 33	
Capital subscribed (permanent)	79,153,582 33	62,004,962 33	3,601,690 00
Capital subscribed (terminating)			25,474,910 00
Liabilities.			
Liabilities to shareholders :			
Permanent.... Stock fully paid up	15,230,884 53	16,031,490 31	1,758,500 00
Permanent.... Stock paid up in part	17,333,146 67	14,924,787 58	920,661 22
Terminating.. Stock fully paid			341,420 66
Terminating.. Prepaid			1,738,659 62
Terminating.. Instalment stock			2,528,132 86
Reserve fund	10,503,210 97	9,620,978 22	409,926 62
Dividends declared and unpaid	745,957 18	741,679 01	9,826 55
Contingent fund	1,029,353 81	1,210,482 16	77,101 85
Unappropriated profits	364,457 54	73,985 77	11,220 07
Profits on terminating stock			539,304 48
Other liabilities to shareholders	26,188 79	9,675 27	24,665 99
Total liabilities to shareholders	45,233,199 49	42,613,078 22	8,359,419 92
Liabilities to public :—			
Deposits	16,134,696 31	17,515,885 77	1,180,305 48
Interest on deposits	366,770 32	323,480 24	16,681 74
Debentures payable in Canada	9,998,835 29	11,042,435 46	396,901 12
Debentures payable elsewhere	42,607,318 75	41,370,063 35	87,356 38
Debenture stock	11,657,344 74	4,023,375 50	
Interest on debentures and debenture stock	524,469 15	439,880 35	7,136 90
Due on loans in process of completion	196,115 79	108,724 38	77,904 24

TABLES.

ASSETS, ETC.

ies having ter- as well as per- or having ter- stock only.	Loaning Land Companies.		Trusts Companies.		Grand total of liabilities and assets for Loan Companies, Loaning Land Companies, and Trusts Companies; also total stock authorized and subscribed.	
1826.	1897.	1896.	1897.	1896.	1897.	1896.
$ c.	$ c	$ c.	$ c.	$ c.	$ c.	$ c.
... ...	14,433,333 33	14,433,333 33	5,500,000 00	2,400,000 00	129,014,355 66	98,978,855 66
3,244,956 00	6,413,516 66	6,040,480 77	3,826,900 00	2,400,000 00	92,995,688 99	73,690,399 10
23,282,315 00	....	.. ..	.....	....	25,474,910 00	23,282,315 00
1,551,120 94	1,575,850 00	1,581,630 00	....	.....	18,565,234 53	19,164,241 25
603,633 07	2,642,735 73	2,631,174 80	896,966 00	540,897 49	21,793,509 6?	18,700,492 84
... .	....	.....	....	....	341,420 66	.....
1,063,680 61	....	....	....	.....	1,738,659 62	1,063,680 61
2,109,915 53	....	.....	....	....	2,528,132 86	2,109,915 53
242,419 52	277,666 63	386,224 89	277,736 12	250,000 00	11,468,540 34	10,499,622 63
5,840 46	58,389 72	57,603 47	17,379 59	8,353 79	831,553 04	813,476 73
60,778 17	42,420 88	56,282 58	53,386 53	63,640 93	1,202,263 07	1,391,183 84
176,623 36	45,244 09	29,021 89	24,383 69	38,774 58	445,395 39	318,405 60
304,015 87	.....	....	.. ..	.....	539,304 48	304,015 87
127,009 76	....	. . ..	....	.....	50,854 78	136,685 03
6,245,037 29	4,642,307 05	4,741,937 63	1,269,851 93	901,666 79	59,504,778 39	54,501,719 93
936,341 34	305,378 84	259,528 55	308,528 92	258,769 50	17,928,909 55	18,970,525 16
491 12	4,879 50	5,520 57	.....	.....	388,331 56	329,491 93
216,460 00	1,142,649 12	1,165,873 89	.....	.....	11,538,385 53	12,424,769 35
.....	888,693 73	892,587 06	.....	.....	43,583,368 86	42,262,650 41
....	....	..... .	.....	.....	11,657,344 74	4,023,375 50
3,340 71	24,555 19	23,573 85	.....	.....	556,161 24	466,794 91
46,558 80	....	.....	535 92	1,686 17	274,555 95	156,969 35

COMPARATIVE

	Loan Companies having only permanent stock.		Loan Companies having permanent stock, terminating
	1897.	1896.	1897.
	$ c.	$ c.	$ c.
Owing to banks	67,337 23	184,843 07	52,577 10
Other liabilities to public	415,899 18	207,118 94	3,394 08
Total liabilities to public	81,968,786 76	75,215,807 06	1,822,257 04
Contingent liabilities	.....	.....	.....
Grand total liabilities to shareholders and public	127,201,986 25	117,828,885 28	10,181,676 96
Assets.			
Debts secured by mortgages of land. Mortgages of realty	101,212,963 79	95,609,038 22	8,941,037 92
Debts secured by mortgages of land. Mortgaged land held for sale.	5,951,977 88	3,837,681 36	174,773 19
Interest	1,628,557 60	1,646,267 62	95,684 78
Debts secured by :—			
Debentures and debenture stock	1,968,624 47	2,301,224 05	31,767 22
Government securities	1,847,863 01	675,237 12	.....
Shareholders' stock	595,547 12	607,880 07	323,458 55
Stocks, bonds and securities, other than foregoing	4,501,362 61	2,045,149 04	56,267 75
Office premises	1,685,245 45	1,640,921 13	24,000 00
Freehold land	3,131,825 24	2,808,751 62	67,703 39
Office furniture	28,252 90	40,578 62	15,776 62
Cash	4,574,696 33	3,494,331 18	419,383 68
Other assets	65,069 85	3,097,703 08	51,823 86
Not owned beneficially	.....	.....	.....
Impairment	.....	24,122 17	.....
	127,201,986 25	117,828,885 28	10,181,676 96
Miscellaneous :—Particular items of receipts, expenditures, and other details.			
Receipts.			
Received from borrowers (principal or interest)	23,104,479 76	21,403,431 77	1,642,553 17
Received from depositors during the year	19,041,222 56	18,817,401 05	2,030,619 27
Received from shareholders during the year	171,556 99	249,108 17	1,959,611 23
Debentures issued during the year	6,801,691 84	*7,902,628 49	139,679 97

*Including debentures and debenture stock combined, $600,639.12.

TABLES.—*Continued.*

ies having ter- as well as per- or having ter stock only.	Loaning Land Companies.		Trusts Companies.		Grand total of liabilities and assets for Loan Companies, Loaning Land Companies, and Trusts Companies; also total stock authorized and subscribed.	
1896.	1897.	1896.	1897.	1896.	1897.	1896.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
11,551 63	712,738 86	16,074 81	....	44,571 97	832,653 19	257,041 48
34,981 90	347,011 89	373,408 28	86,572 34	6,337,743 82	852,877 49	6,953,252 94
1,249,725 50	3,425,907 13	2,736,567 01	395,637 18	6,642,771 46	87,6 2.588 11	85,844,871 03
.....	.....	.....	6,772,774 31	.....	6,772,774 31	.....
7,494,762 79	8,068,214 18	7,478,504 64	8,438,263 42	7,544,438 25	153,890,140 81	140 346,590 96
6,630,229 48	1,032,528 67	1,139,178 39	509,993 31	5,830,464 00	111,696 523 69	109,208,910 09
72,712 58	140,948 42	96,552 63	26,265 97	90,056 67	6,293,965 46	4,097,003 24
89,672 13	50,101 29	28,847 96	88,686 27	128,457 53	1,863,029 94	1,893,245 24
439 17	77,251 67	....	46,060 00	516,226 58	2,123,705 76	2,817,939 80
.....	.....	14,754 00	.....	....	1,857,863 01	689,991 12
216,539 78	14,321 80	13,511 25	.....	....	933,327 47	837,931 10
90,970 76	1,848,857 47	53,694 45	269,076 55	97,867 14	6,655,564 38	2,287,681 39
26,500 00	20,196 06	.....	262,574 17	130,000 00	1,992,015 68	1,797,421 13
86,152 36	4,253,298 55	4,893,169 21	136,334 12	240,270 73	7,589,161 30	8,028,343 92
10,234 02	895 06	1,799 85	54,889 16	24,235 54	99,813 74	76,848 03
219,544 78	63,345 40	49,550 41	198,684 70	215,309 19	5,256,110 11	3,978,735 56
51,717 73	566,467 39	1,187,446 49	16,158 75	271,550 87	699,519 85	4,608,418 17
.....	.....	.....	6,829,540 42	....	6,829,540 42	.....
....	.....	....	.....	.....	.....	24,122 17
7,494,762 79	8,068,214 18	7,478,504 64	8,438,263 42	7,544,438 25	153,890,140 81	140,346,590 96
316,187 17	738,654 03	123,167 85	1,788,485 97	1,116,288 97	27,274,172 93	23,039,075 76
1,074,697 97	289,526 31	230,561 81	.....	1,139,897 74	21,361,468 14	21,262,558 57
1,469,132 50	848,883 35	....	101,528 22	.....	3,081,579 79	1,718,240 67
105,760 00	.....	121,712 05	.....	.....	6,941,371 81	8,130,100 54

COMPARATIVE

Miscellaneous:—Particular items of receipts, expenditures, and other details.	Loan Companies having only permanent stock.		Loan Companies having stock permanent stock, minating
	1897.	1896.	1897.
	$ c.	$ c.	$ c.
Debenture stock issued during the year	.....	126,216 98	.....
Forfeited to company	.....	.....	48,538 34
Expenditures.			
Loaned during year on mortgages	8,773,976 81	10,295,917 26	2,401,449 92
Loaned during year on other security	6,556,827 08	†4,870,741 93	202,644 48
Deposits paid off	18,126,811 14	19,040,627 28	2,012,250 29
Debentures paid off	8,211,181 76	6,588,324 62	109,242 88
Interest paid on deposits	215,103 02	671,149 81	44,713 61
Interest paid on debentures and debenture stock	1,785,212 55	1,961,078 01	19,288 66
Interest paid on deposits and debentures	.....	205,504 61	.....
Cost of management	1,050,458 82	1,926,260 87	320,349 41
Paid withdrawing shareholders	.....	.....	473,096 90
Miscellaneous Details.			
Loans written off or transferred to real estate account	1,378,088 16	746,419 46	94,581 22
Debentures maturing during year	11,507,554 66	11,579,003 34	108,165 00
Average rate of interest paid on—			
1. Deposits	% 3 564	% 3.66	% 4.026
2. Debentures	% 4.140	% 4.23	% 4.204
3. Debenture stock	% 4.233	.....	.....
Average rate of interest received by corporation—			
On realty	% 5.858	% 5.92	% 8.363
On other security	% 5.353		% 8.533
Number and amount of mortgages enforced—No.	862	831	132
Amount	1,728,597 26	1,635,418 04	157,686 63

† Including $148,978.35 loaned on mortgages and other securities combined.

TABLES.—*Concluded.*

ies having ter- as well as per- or having ter- stock only.	Loaning Land Companies.		Trusts Companies.		Grand totals.	
1896.	1897.	1896.	1897.	1896.	1897.	1896.
$ c.	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
.....	.....	.....	.....	.....	....	126,216 98
11,529 94	.....	.....	.....	....	48,538 24	11,529 94
2,137,779 76	58,020 62	81,527 14	723,224 98	859,592 76	11,956,682 33	1,874 816 92
117,125 36	19,228 20	....	959,121 04	405,379 53	7,737,820 80	5,392,246 82
1,074,395 75	243,319 17	220,648 75	.....	....	20,382,410 46	20,335,671 98
....	1,374,630 61	281,649 89	.....	....	9,695,055 25	6,869,974 51
28,684 37	10,194 78	11,401 07	..... .	....	270,011 41	711,235 25
8,700 81	91,366 16	93,585 40	....	.....	1,895,867 37	2,063,337 13
5,784 38	.....	....	....	....	....	211,288 99
202,002 03	115,343 68	30,558 31	112,840 38	66,298 27	1,598,992 29	2,225,119 48
342,233 53	.....	....	....	.....	473,096 90	342,233 53
126,023 47	81,405 25	50,072 93	. ...	.....	1,554,074 63	922,515 86
39,900 00	353,348 10	419,755 33	.....	.....	11,969,067 76	12,038,658 67
% 3.948	% 4.647	% 4.468	% 4.350	.....	% 4.147	% 4.025
4.719	4.518	4.663	.....	....	4.287	4.537
.....	.....	....	.....	.....	4.233	.....
% 7.737	% 5.958	} % 5.750	{ % 6.127	% 5.590	% 6.577	% 6.459
7.666	5.500	}	{ 4.880	5.270	6 067	6.152
45	.....	....	11	69	1,005	945
88,553 79	....	.....	26,600 00	289,609 50	1,912,883 89	2,013,581 33

LIST OF LOAN CORPORATIONS.

LIST OF LOAN

Page.	Name of Company.	Description of Company.	When incorporated.
13	Agricultural Savings and Loan Company	Loan Co	3rd May, 1872
349	Aid Savings and Loan Company	"	3rd March, 1893.
19	Atlas Loan Company	"	4th August, 1887
25	Barrie Loan and Savings Company (Limited)	"	14th April, 1881.
353	Birkbeck Investment, Security and Savings Company (Toronto).	"	10th May, 1893.
359	Birkbeck Loan Company (London, Ont.)	"	11th Feb., 1893.
31	British Canadian Loan and Investment Company (Limited)	"	12th April, 1876.
37	British Mortgage Loan Company of Ontario	"	5th Oct, 1877
43	Brockville Loan and Savings Company (Limited)	"	11th May, 1885.
49	Building and Loan Association	"	14th Feb., 1870.
55	Canada Landed and National Investment Company (Limited)	"	1858
61	Canada Permanent Loan and Savings Company	"	1st March, 1855.
365	Canadian Homestead Loan and Savings Association	"	24th Sept., 1886.
373	Canadian Mutual Loan and Investment Company	"	13th June, 1890.
385	Canadian Savings, Loan and Building Association	"	11th Feb., 1890.
379	Canadian Savings and Loan Company of London, Canada.	"	2nd Sept., 1875
67	Central Canada Loan and Savings Company of Ontario	"	7th March, 1884.
73	Chatham Loan and Savings Company	"	27th Sept., 1881.
79	City and County Loan Association	"	26th Jan., 1889
85	Crédit Foncier Franco-Canadien, Montreal	"	January, 1881
91	Crown Savings and Loan Company	"	30th Jan., 1882.
391	Dominion Permanent Loan Company (a)	"	7th May, 1890
97	Dominion Savings and Investment Society	"	20th April, 1872.
517	Dovercourt Land, Building and Savings Company (Limited)	Loaning Land Co.	16th Dec., 1885.
103	East Lambton Farmers' Loan and Savings Company	Loan Co	19th Dec., 1891.
109	Elgin Loan and Savings Company	"	21st April, 1879.
399	Equitable Savings, Loan and Building Association	"	29th Feb., 1892.
115	Freehold Loan and Savings Company	"	27th April, 1859.

(a) Formerly Dominion Building and Loan Association.

CORPORATIONS

Chief Office in Ontario.	Manager.	President.	Financial statement for the year ending
London	C. P. Butler	Daniel Regan	December 31st, 1897.
Toronto	Arthur E. Hill	R. S. Williams	February 28th, 1898.
St. Thomas	A. E. Wallace	Hon. R. Harcourt	December 31st, 1897.
Barrie	R. Laidlaw	N. Dyment	" 31st, 1897.
Toronto	F. W. G. Fitzgerald	H. P. Dwight	" 31st, 1897.
London	T. H. Luscombe	R. J. C. Dawson	" 31st, 1897.
Toronto	R. H. Tomlinson	A. H. Campbell	" 31st, 1897.
Stratford	William Buckingham	Hon. Thos. Ballantyne	" 31st, 1897.
Brockville	D. B. Jones	W. H. Cole	" 31st, 1897.
Toronto	Walter Gillespie	Larratt W. Smith, Q.C. LL.D	" 31st, 1897.
Toronto	Andrew Rutherford	John L. Blaikie	" 31st, 1897.
Toronto	J. Herbert Mason	J. Herbert Mason	" 31st, 1897.
Toronto	A. J. Pattison	John Hillock	September 30th, 1897.
Toronto	A. J. Jackson	J. J. Withrow	December 31st, 1897.
Toronto	W. J. Hambly	John A. Carlaw	" 31st, 1897.
London	M. H. Rowland	Robt. Fox	May 31st, 1897.
Peterborough	E. R. Wood (Toronto)	Hon. Geo. A. Cox	December 31st, 1897.
Chatham	S. F. Gardiner	Arch. Bell	" 31st, 1897.
Toronto	W. J. Wharin	Ambrose Kent, J. P	" 31st, 1897.
Toronto	W. E. Long	Geo. Brolemann	" 31st, 1897.
Petrolea	Wm. English	J. H. Fairbank	" 31st, 1897.
Toronto	F. M. Holland	J. R. Stratton, M. P. P.	" 31st, 1897.
London	Nathaniel Mills	Robt. Reid	" 31st, 1897.
Toronto	James T. Locke	James Brandon	" 31st, 1897.
Forest	Newton Tripp	James Hutton, M. D	February 28th, 1898.
St. Thomas	George Bowley	D. McLarty	December 31st, 1897.
Toronto	E. A. Taylor	H. O'Hara	" 31st, 1897.
Toronto	Hon. S. C. Wood	C. H. Gooderham	April 30th, 1897.

LIST OF LOAN COR-

Page.	Name of Company.	Description of Company.	When incorporated.
121	Frontenac Loan and Investment Society	Loan Co.	13th Aug., 1863.
127	Grey and Bruce Loan Company	"	10th May, 1889.
405	Globe Savings and Loan Company	"	9th Feb., 1892.
133	Guelph and Ontario Investment and Savings Society	"	19th Jan, 1876.
139	Hamilton Mutual Building Society	"	31st Oct., 1890.
145	Hamilton Provident and Loan Society	"	6th June, 1871.
151	Hastings Loan and Investment Society	"	14th Jan., 1876.
413	Home Building and Savings Association (of Ottawa)	"	24th June, 1890.
157	Home Savings and Loan Company	"	25th April, 1877
163	Huron and Bruce Loan and Investment Company	"	27th Jan., 1885.
169	Huron and Erie Loan and Savings Company	"	18th March, 1864
175	Huron and Lambton Loan and Savings Company	"	1st Nov., 1877.
181	Imperial Loan and Investment Company of Canada (Limited)	"	19th Aug., 1869.
567	Imperial Trusts Company of Canada	Trusts Co.	23rd June, 1887.
187	Industrial Mortgage and Savings Company	Loan Co.	20th Aug., 1889.
193	Lambton Loan and Investment Company	"	27th March, 1847
199	Landed Banking and Loan Company	"	16th Dec., 1876.
523	Land Security Company	Loaning Land Co.	1873.
205	London and Canadian Loan and Agency Company (Limited)	Loan Co.	1863.
419	London Loan Company of Canada	"	2nd May, 1877.
211	London and Ontario Investment Company (Limited)	"	1876.
573	London and Western Trusts Company (Limited)	Trusts Co.	17th Sept., 1896
217	Metropolitan Loan and Savings Company	Loan Co.	1st June, 1870.
223	Midland Loan and Savings Company	"	5th July, 1872.
425	Midland and Western Counties Loan and Savings Company	"	26th May, 1893.
431	Montreal Loan and Investment Company, Montreal	Local Loan Co.	7th April, 1894.
437	Niagara Falls Building, Savings and Loan Association	" "	5th March, 1894

PORATIONS.—*Continued.*

Chief office in Ontario.	Manager.	President.	For the year ending.
Kingston	Thomas Briggs	Hon. Sir Richard Cartwright	31st December, 1897.
Owen Sound	Wm. P. Telford	S. J. Parker	"
Toronto	Edgerton W. Day	John Flett	"
Guelph	John E. McElderry	Alex. B. Petrie	"
Hamilton	Walter Anderson	Alfred Ward	30th November, 1897.
Hamilton	C. Ferrie	Geo. H. Gillespie	31st December, 1897.
Belleville	J. P. C. Phillips	Hon. Sir Mackenzie Bowell.	"
Ottawa	C. A. Douglas	John R. Armstrong	"
Toronto	James Mason	Hon. Sir Frank Smith	"
Goderich	Horace Horton	Francis Jordan	"
London	Geo. A. Somerville	John W. Little	"
Sarnia	J. Cameron Douglas	James Flintoft	"
Toronto	E. H. Kertland	James Thorburn, M.D.	"
Toronto	J. S Lockie	H. S. Howland	"
Sarnia	J. S. Symington	J. F. Lister, M P	"
Sarnia	A. C. Clark	Chas. McKenzie	30th June, 1897.
Hamilton	C. W. Cartwright	Matthew Leggat	31st December, 1897.
Toronto	Wm. Innis Mackenzie	Robert Jaffray	"
Toronto	Jas. Ferrier Kirk	Geo R R. Cockburn, M.A.	31st August, 1897.
London	Malcolm John Kent	Thomas Kent	31st December, 1897.
Toronto	A. M. Cosby	Hon. Sir Frank Smith	30th June. 1897.
London	John B. Kilgour	G. C. Gibbons, Q.C.	31st December, 1897.
Ottawa	C. R. Cunningham	H. V. Noel	"
Port Hope	George M. Furby	John Mulligan	"
Peterborough	F. J. Jamieson	J. R. Stratton, M.P.P.	"
Ottawa	Charles King, Ottawa	L. O. David	"
Niagara Falls	Edith Edmand	Frank Le Blond	"

LIST OF COR-

Page.	Name of Company.	Description of Company.	When incorporated.
229	North British Canadian Investment Company (Limited)	Loan Co	14th Oct., 1876.
235	North of Scotland Canadian Mortgage Company (Limited)	"	17th Dec., 1875.
243	Ontario Building and Savings Society	"	26th June, 1874.
529	Ontario Industrial Loan and Investment Company (Limited)	Loaning Land Co.	28th May, 1880.
249	Ontario Loan and Debenture Company	Loan Co	26th Sept., 1870.
255	Ontario Loan and Savings Company	"	12th Feb., 1873.
443	Ontario Permanent Building and Loan Association	"	6th Oct., 1892.
579	Ottawa Trusts and Deposit Company (Limited)	Trusts Co	23rd Jan., 1896.
451	Owen Sound Building and Savings Society	Loan Co	1st April, 1884.
261	Oxford Permanent Loan and Savings Society	"	27th Oct., 1865.
457	People's Building and Loan Association of London	"	22nd June, 1892
267	People's Loan and Deposit Company	"	18th Feb., 1877.
463	Peterborough Workingmen's Building and Savings Society	"	17th Jan., 1889.
	Provincial Trust Company of Ontario	Trust Co	27th Oct., 1897.
469	Provincial Building and Loan Association	Loan Co	9th Nov., 1891.
535	Provident Investment and Mortgage Guarantee Company	Loaning Land Co.	3rd Nov., 1893.
273	Real Estate Loan Company of Canada (Limited)	Loan Co	17th Sept., 1879.
477	Reliance Loan and Savings Company of Ontario	"	2nd Mar., 1893.
279	Royal Loan and Savings Company	"	24th Mar., 1876.
285	Security Loan and Savings Company	"	12th Mar., 1870.
309	Scottish American Investment Company, Edinburgh	"	29th Mar., 1873.
541	Scottish Ontario and Manitoba Land Company (Limited) Glasgow	Loaning Land Co.	15th Dec., 1879.
313	Simcoe Loan and Savings Company	Local Loan Co	18th Apr., 1896.
483	Sons of England Building, Loan and Savings Association	Loan Co	24th June, 1889.
297	Southwestern Farmers' and Mechanics' Savings and Loan Society	"	24th Nov., 1874.
291	Southern Loan and Savings Company	"	24th Nov., 1870.
489	Standard Loan Company	"	14th Feb., 1873.
303	Star Loan Company	"	23rd Aug., 1881.
495	Stratford Building and Savings Society	"	23rd Aug., 1889.
503	Sun Savings and Loan Company	"	3rd May, 1893.

PORATIONS.—*Continued.*

Chief Office in Ontario.	Manager.	President.	For the year ending.
Toronto	Jas. L. Scarth	Robert Miller	31st December, 1897.
Toronto	Osler & Hammond	Jas. W. Barclay	11th November, 1897.
Kingston	Jas. McArthur	C. V. Price	31st December, 1897.
Toronto	Edmund T. Lightbourne	Wm. Booth	"
London	Wm. F. Bullen	John McClary	"
Oshawa	T. H. McMillan	W. F. Cowan	"
Woodstock	R. W. Ball	A. B. Welford, M.D.	30th November, 1897.
Ottawa	H. W. Chamberlain	Alexander Fraser	31st December, 1897.
Owen Sound	W. A. Bishop	Geo. Inglis	31st October, 1897.
Woodstock	Malcolm Douglas	H. P. Brown	31st December, 1897.
London	A. A. Campbell	Judge Elliott	"
Toronto	Samuel W. Black	Hon. J. C. Aikins	"
Peterborough	J. Corkery	John Lynch	"
Toronto	Wm. Beith	Sir Richard Cartwright, G.C.M.G.	
Toronto	E. C. Davies	Thos. Crawford	"
Toronto	H. M. Asling	Robt. Jaffray	"
Toronto	Benj. Morton	Jno. Smart	"
Toronto	John Blacklock	Hon. John Dryden	"
Brantford	R. S. Schell	Wm. Watt, Sr	"
St. Catharines	Eugene F. Dwyer	Thos. R. Merritt	"
Toronto	*W. H. Lockhart Gordon	Sir Geo. Warrander, Bart.	"
Toronto	Jas. L. Scarth	Hugh Wright	"
Barrie	O. H. Lyon	Hon. Charles Drury	"
Toronto	George Clay	Jno. Aldridge	30th June, 1897.
St. Thomas	W. E. Leonard	E. W. Gustin, M.D.	31st December, 1897.
St. Thomas	Jno. Walker Stewart	Wm. Mickleborough	"
Toronto	F. M. Holland	T. P. Coffee	"
St. Thomas	D. M. Tait	Hon. D. Mills	31st August, 1897.
Stratford	D. B. Burritt	M. F. Goodwin	31st December, 1897.
Toronto	W. Pemberton Page	Jno. T. Gilmour, M.D.	"

*Chief agent in Ontario.

LIST OF LOAN COR-

Page.	Nome of Company.	Description of Company.	When incorporated.
585	Toronto General Trusts Company	Trusts Co	1872
547	Toronto Land and Investment Corporation	Loaning Land Co.	30th Jan., 1886.
553	Toronto Savings and Loan Company	"	15th June, 1885
591	Trusts Corporation of Ontario	Trusts Co	1889
319	Trust and Loan Company of Canada, London, Eng	Loan Co	9th Dec., 1843.
597	Trust and Guarantee Company (Limited) (*h*)	Trusts Co	24th Feb., 1897.
327	Union Loan and Savings Company	Loan Co	18th Mar., 1865
333	Victoria Loan and Savings Company	Local Loan Co	4th Sept., 1895.
559	Walkerville Land and Building Company (Limited)	Loaning Land Co.	22nd Oct., 1890.
339	Western Canada Loan and Savings Company	Loan Co	13th Jan., 1863.
345	Western Loan and Trust Company (*g*)	"	21st Jan., 1892.
509	York County Loan and Savings Company	"	21st Dec, 1891.

(*g*) The Company has notified the Registrar of Loan Corporations of its intention to discontinue business in Ontario.

(*h*) Incorporated by Letters Patent of Ontario, 24th February, 1897.

PORATIONS.—*Continued.*

Chief office in Ontario.	Manager.	President.	For the year ending.
Toronto	J. W. Langmuir.	John Hoskin, Q.C	31st March, 1897.
Toronto	John C. Copp	Geo. R. R. Cockburn	31st December, 1897.
Peterborough	W. G. Morrow	Hon. Geo. A. Cox	"
Toronto	A. E. Plummer	Hon. J. C. Aikins, P. C	"
Toronto	W. B. Bridgeman Simpson	Chas. Morrison	30th September, 1897.
Toronto	T. P. Coffee	J. R. Stratton, M.P.P	31st December, 1897.
Toronto	James C. McGee	Walter B Geikie, M.D	"
Lindsay	James Low	Jno. Magwood	"
Walkerville	D. F. Matthew	E. Chandler Walker	"
Toronto	Walter S. Lee	Hon. G. W. Allan	"
Montreal	W. Barclay Stephens, Montreal	Hon. A. W. Ogilvie	No statement.
Toronto	Joseph Phillips	Joseph Phillips	31st December, 1897.

RE LOAN CORPORATIONS ACT, R. S. O., 1897, C. 205.

BEFORE

THE REGISTRAR OF LOAN CORPORATIONS. } 21ST MAY, 1898.

IN THE MATTER OF THE CANADIAN MUTUAL LOAN AND INVESTMENT COMPANY AND A BY-LAW OF THE SAID COMPANY PURPORTING TO CREATE PERMANENT CAPITAL IN SHARES OF TEN DOLLARS EACH.

JUDGMENT.

BEFORE THE REGISTRAR OF LOAN CORPORATIONS.

21st May, 1898.

In the matter of The Canadian Mutual Loan and Investment Company and a By-law of the said Company purporting to create permanent capital in shares of $10 each.

In December, 1897, the Company's solicitor delivered to the Registrar of Loan Corporations a copy of the following notice of a Directors' by law proposed to be moved on the following day by Mr. Jackson, Director and General Manager of the Company :

"Mr. Jackson gave notice that he would to-morrow move that the by-laws of the Company be amended as follows :

"Article I, section 3 : By striking out the entire section and inserting in lieu thereof, —'The permanent capital stock of the Company is five million dollars, of which four million dollars shall be divided into shares of one hundred dollars each, and one million dollars into shares of one dollar each.'"

The Registrar pointed out that, even if the Directors or the Shareholders were otherwise at liberty to alter the capital of the Company in this summary manner, there were serious objections arising out of the Loan Corporations Act to the issue of permanent shares of a merely nominal value ; but that in any case the third article of the declaration incorporating the Company fixed the shares at $100 each ; and that the eighth article of the declaration contains an express proviso that by-laws passed by virtue of that article must not conflict with the articles of the declaration.

On the 18th March, 1898, Mr. Jackson, the General Manager of the Company, delivered to the Registrar a copy of the by-laws of the Company, "embracing amendments to February, 22nd, 1898." The by-laws so delivered purported by section 3 of article I, and sections 11 and 12 of article II, to create five million dollars permanent stock in shares of ten dollars each.

These sections are as follows :

"Article I, section 3 : The permanent capital stock of the Company is $5,000,000, divided into 500,000 shares of the capital value of $10 each."

"Article II, section 11 : Certificates of fully-paid up permanent stock of the capital value of $10 per share to the amount of $2,000,000 may be issued by the Company. This stock shall be non-withdrawable, and shall contribute to the Expense Fund an amount at the rate of one and one-fifth per cent. per annum of its capital value, which shall be deducted from the earnings of the Company. Fully-paid-up permanent stock shall be entitled to such dividends, to be paid from the earnings of the shares, as may be declared by the Board of Directors up to and not exceeding seven per cent. per annum."

"Article II, section 12 : Certificates of ordinary permanent stock of the capital value of $10 per share, to the amount of $3,000,000 may be issued by the Company on such terms and conditions as the Board of Directors determine, and upon which the Directors may annually declare either a dividend or a bonus, or both, as they may in their discretion determine. This stock shall contribute to the Expense Fund a sum not exceeding an amount calculated at the rate of one and one-fifth per cent. per annum of its capital value, which shall be deducted from the earnings of the Company."

On the 22nd of March, 1898, the Registrar gave the General Manager of the Company the following notice :

"Re Amendments to By-laws.

"In this matter I have received your letter of the 17th instant enclosing certified copy of by-laws of the above named Company, which you describe as embracing all amendments made by the Shareholders at the annual meeting held on the 22nd day of February, A. D. 1898. I of course have not as yet had time to examine these by-laws

critically, but you refer me in particular to the new provision (contained in article I, section 3) which purports to enact as follows: 'Section 3. The permanent capital stock of the Company is $5,000,000, divided into 500,000 shares of the capital value of $10 each.' Some weeks ago, when a proposal was made in behalf of the Company by your Solicitor and one of the Trustees to the effect that the Company should issue permanent stock of the capital value of $1.00 per share, I reminded these gentlemen that the Articles of Incorporation creating the Company which were filed with the Clerk of the Peace for the County of York on the 13th June 1890, (and which have since been transferred to this Department.) fixed the capital stock of the Corporation at 500,000 shares of the par value of $100.00 each. I further stated to your Solicitor and the Trustee that I was unable to find any authority of law for the proposal to issue permanent stock at the par value of $1.00 per share, or at any value below that fixed by the Articles of Incorporation, namely, $100.00 per share.

"I have to request that the Company will state in writing under what authority of law the shareholders have now enacted that the permanent capital stock of the Company shall be divided into 500,000 shares of the capital value of $10.00 each.

"If the issue of this new stock should be found to be unauthorized and illegal, such an act of issue would probably affect the registry of the Company. I have therefore to ask that, until this question is definitely determined, no permanent stock be issued at a lower par value than $100.00 per share."

The Company has now delivered to the Registrar a written argument entitled, "Memo in support of legality of by-law of the Canadian Mutual Loan and Investment Company, to create a permanent capital and divide the shares into $10.00 shares."

This title may suggest that heretofore no permanent stock whatever was issued by this Company; but as a matter of fact the sworn statements made by the Company to the Government of Ontario for the respective years ending 31st December, 1896 and 1897, declare fully-paid permanent stock to have been already issued and to be on foot, viz:

At 31st December, 1896, to the amount of $1,200;

At 31st December, 1897, to the amount of $9.300; the shares of such capital being $100 each. (See also By-laws as reprinted in 1897; Art. II, Sec. 1.)

Before considering the various branches of the argument advanced by the Directors, it may be well to premise that the Company was incorporated under the Building Societies Act, R. S. O. 1887, c. 169, by a declaration filed with the Clerk of the Peace for the County of York, on the 13th June, 1890. The declaration contains eight articles. The following is a copy of the declaration as far as the third article inclusive:—

"We the undersigned hereby associate ourselves together in (*sic*) and agree to become incorporated under the provision of chapter 169 of the Revised Statutes of Ontario, entitled 'An Act Respecting Building Societies, with all the powers conferred by the said Act' and the Acts amendatory thereto, for the purpose of engaging in and carrying on business as hereinafter mentioned, and to that end we do hereby adopt and sign the following Articles of Incorporation:—

"First.—The name of the said Corporation shall be 'The Canadian Mutual Loan and Investment Company'. The general nature of the business of the said corporation shall be the accumulation of funds to be paid in on the basis of monthly instalments on its shares of stock, and loaning such funds, with its net accumulations, or other net earnings to its members upon mortgages and real estate securities for the purpose of enabling them to purchase, build upon or otherwise improve their real estate, or upon the pledge of the stock of the Company held by its members, and to conduct the ordinary and

usual course of business as conducted by such Companies under the laws of this Province, and transact all such other business as the laws of the Province of Ontario allow Mutual Building Societies to do and perform.

"The Head Office of this Company shall be in the City of Toronto, Ontario.

"Second.—The time of commencement of said Corporation shall be 16th day of June, 1890, and the period of continuance thereof shall be fifty years from date.

"Third—The capital stock of this Corporation shall be fifty million ($50,000,000) dollars, and shall be paid in monthly instalments in such amounts per share as shall be provided for in the by-laws. The Corporation may commence business as soon as 100 shares has been subscribed to the capital stock. This Corporation may also borrow money upon the sale of debentures issued by said Corporation. The number of shares shall be five hundred thousand of a par value of one hundred ($100) dollars each."

The fourth article sets out the names and residences of the 20 incorporators required by the Act.

The fifth article relates to the number, powers, election and tenure of the directors.

The sixth article divides the company's moneys into two distinct funds, the Loan Fund and the Expense Fund.

For the custody and safe-keeping of the Loan Fund the seventh article authorizes three trustees, or a Trust Corporation, as custodian.

The eighth article is as follows:—

"Eighth.—The Board of Directors shall have power to make, adopt, amend, alter or repeal any and all by-laws necessary for the conducting of the business of the said Corporation, not to conflict with the laws of this Province or the Dominion of Canada, or with the said Trust Agreement."

The issue of permanent shares of Loan Company's stock in sums of $1.00 as at first proposed, or of $10 as actually enacted by the new by-law, is not I think contemplated by the Statute; and raises questions of very great public importance. Under the law of the Province, R. S. O. 1897, c. 205, s. 26, a Loan Company incorporated by the Province acquires power to borrow money only when the Corporation has a paid-up, unimpaired, permanent and non-withdrawable capital of at least $100,000, or (being constituted with joint stock capital) has a subscribed permanent stock of at least $300,000 on which at least $100,000 has been actually paid and is unimpaired. Then as to the measure or limit of this borrowing power, section 30 (2) enacts that, when the company borrows solely on debentures or other securities and by guarantee, and not by taking deposits, the aggregate amount of the sum so borrowed shall not at any time exceed four times the amount of its paid-up and unimpaired capital, or, at the option of the corporation, the amount of its subscribed fixed, and permanent capital upon which not less than twenty per cent. has been paid. Debenture stock is for the purpose of the above limitation treated as part of the debenture debt, section 33. From these provisions it is apparent that the Corporation may borrow against its subscribed but uncalled capital; in other words, the uncalled capital is treated as an asset or security for the holders of debentures and debenture stock. If the Company of its own motion can alter the par value of its permanent shares, or can issue shares of permanent capital at $10 per share, it might equally well issue such shares at $1 per share (as was actually in this case at first intended to be done), or at 10 cents a share, or at any other nominal sum. This would practically destroy the value of the security intended by the Statutes to reside in the uncalled capital.

In Re Financial Corporation 2 Ch. App. 714 (1867), the Memorandum of Association provided that the capital should be £3,000,000, divided into 30,000 shares of £100 each, "subject to be increased or modified," and the articles gave the Board of Directors power to divide the shares into shares of smaller amount. The Directors exercised the power and converted each £100 share into five £20 shares. After this conversion of the shares,

the Directors delivered to the Registrar of Joint Stock Companies a list of the shareholders in which the shares were treated as £20 shares, but the Registrar refused to accept the list.

The company was soon afterwards wound up and various cases turning upon the legality of the conversion were heard as Chancery Appeals, 2 Ch., App. 714 sqq

Held that such conversion was unauthorized and void; for that under clause 12 of the Companies Act (1862) the Memorandum can only be altered in certain particulars of which this was not one, and Lord Cairns, L J., held that even an express power in the Memorandum to reduce the nominal amount of the shares would be ineffectual. In Feiling and Rimington's case, Ibid, at p. 728, Turner L. J., said :—

"The memorandum, by showing the amount at which the shares were fixed, would indicate to the public the character and position of the shareholders; but if it was allowed to be altered by reducing the amount of the shares, the character of the constituency of the Company might be wholly altered. Many persons who might be quite willing to deal with a Company whose shares were fixed at £100 would not think of dealing with a Company whose shares were fixed at £1. It was argued, however, that there was power to make this conversion independently of the Statute, by force of the memorandum itself which was registered, for that, by the 5th article of the memorandum, the £100 shares were subject to be increased or modified, and that the reduction of the amount of the shares was a modification of them within the meaning of the memorandum; but, in my opinion the term modified, as used in this memorandum, was not meant to warrant, and did not warrant the reduction of the amount of the shares. The memorandum must, I think, be construed with reference to the Statute which prescribes it, and the sound construction of the word 'modified' used in it appears to me to be to construe it as extending to and authorizing those purposes, other than the increase of shares to which the same term 'modified' is applied in the 12th section of the Statute. At all events, I think this word ought not to be construed to have warranted alterations which the Statute did not warrant."

In Holmes' case at 2 Ch. App. 733, Cairns, L. J., said :—

"A consolidation and increase of the nominal value of shares preserves the same amount of capital, but may bring it into fewer hands, and may be more beneficial to creditors by making the capital more easy of collection. But whether this be so or not, every creditor knows, from the express provisions of the Act, that consolidation of shares is an incident to which the Company is subject. A subdivision of shares on the other hand, if valid at all, must be valid to whatever extent it may be carried, and thus creditors of the Company may, upon a winding up, be left, and left without any previous notice given to them by the Act of Parliament, with the unpaid capital of the Company scattered through such a number of hands that the sum recoverable from each would not pay for the trouble and expense of collection."

In Cook on Stock and Stockholders, 3rd Ed., (1894) s. 290, the law is stated in these words :—

"It is a principle of law closely related to those already set forth in this chapter and well settled, that the number of shares into which the capital stock has been divided, and the par value of those shares can neither be increased nor diminished in number or in value without express warrant of authority either from the Legislature or the charter of the Company,"—citing Salem Mill-Dam Corporation *v.* Ropes, 23 Mass., and English cases.

Three cases are cited by the directors in support of their argument, viz :—Sewell's case in Re New Zealand Banking Company, 3 Ch., App. 131; Ambergate Railway Company *v.* Mitchell, 4 Ex. 540; and Murray *v.* Scott, 9 App., Ca. 519, the last being known in the Court below as Re Guardian Permanent Building Society, 23 Ch., D. 440. These cases will now be examined *seriatim*.

Sewell's case, 3 Ch., App. (1868) 131, does not, I think, make for the directors' argument, but against it. That case is constantly cited in text-books on Company Law

as authority for the general unalterability of capital stock when fixed by the instrument of incorporation: Brice's Ultra Vires, 3rd Ed. (1893), p. 314; Palmer, Company Law (1896), p. 60; Manson, Law of Trading Companies, 2nd Ed., pp. 482, 736, 750; Lindley, Law of Companies, 5th Ed. 393.

In Sewell's case the Company was being wound up and Sewell was put on the list of contributories. The Company had issued shares in excess of the amount mentioned in the Memorandum of Association. Sewell, in the words of Cairns, L. J., (3 Ch., App at 137):—"gave a general and somewhat ambiguous authority for the purpose of having his name entered as a shareholder of the Company; he knew it was acted upon; he not only knew it was acted upon, but he knew the number of shares for which in consequence of that authority he had been placed on the list of the Company. He acted by virtue of the title thus acquired in claiming a further part of the capital of the Company, and received a dividend upon all these shares."

The Court held (at p. 138) that the issue of shares in excess of the amount mentioned in the Memorandum of Association was invalid. The Court also held (at p 139) that the subdivision of existing £100 shares into £10 shares was invalid; but that Sewell by his own conduct and acts had estopped himself from setting up this invalidity as a defence against his being placed upon the list of contributories.

In the Bank of Hindustan *v.* Alison, L. R. 6 C. P. 54, Bovill C. J. explained at 69-70 that Sewell's case was a case of estoppel by conduct, and that Sewell's case did not decide that such an issue of shares was valid. See also Bigelow on Estoppel, 5th Ed. (1890), pp. 563, 623, Lindley's Law of Companies, 5th Ed., p 714, both citing Sewell's case. Similarly in Campbell's case, 9 Ch. App. at 15, which was also a case of contribution in a winding up, Selborne, L. C., laid it down that a holder of shares illegally created may under certain circumstances be estopped from using their illegality as a defence. This is manifestly a very different matter from saying that the acts of the Company in those two cases, were legal. In each case, on the contrary, the Court expressly held that the acts of the Company were invalid. See also Ex parte Sandys 42 Ch., p. 98. In many such cases though a shareholder by his own conduct or acts may be estopped from pleading the invalidity of the shares, it may be quite competent for the liquidator to insist on their invalidity, if it were in the interest of the estate to do so, (Campell's Ca. 9, Ch. App. at 15 per Selborne, L. C.) In such cases the shareholder is only a shareholder by estoppel, to use Lord Justice Mellish's phrase in Weikersheim's case, 8 Ch., App. at 839; see also Re Miller's Dale Co'y., 31 Ch. D. at 214 sqq; Fisher's case, 31 Ch. D at 128; Re Empire Assurance Corporation, 6 Ch. App. 266; Ex parte Badman, 45 Ch. D. 16; National Insurance Company *v.* Egleson, 29 Gr. 496. The earlier case Aubergate Ry. Co. *v.* Mitchell (1849), 4 Ex. 540, cited for the directors, differs essentially from their case. There the special Act under which the Company was formed annexed a vote to every £25 of the capital; but did not in terms prescribe that every share issued should be a £25 share. Shares of £20, having no vote annexed to them, were issued. *Held* to be within the terms of the particular Acts governing that Railway Company.

Nor is there any help for the directors in Murray *v.* Scott, L. R, 9 App. Ca. 519. As they lay great stress upon that case it may be well to cite it fully. In that case, upon the winding up of the Guardian Permanent Benefit Building Society, questions arose upon rules 31 and 32 of the Society which purported to have been passed under 6 and 7 Wm. IV, c 32. Under Rule 32 the directors borrowed money for the proper purposes of the Society In giving judgment Selborne, L. C., (said at p. 535):—"The principal question on these appeals is as to the validity of the 32nd rule which authorizes the trustees or directors of the Guardian Permanent Benefit Building Society to borrow 'money from time to time, as occasion may require,' without any limitation of the amount to be so borrowed; with the provision that 'any borrowed money shall be a first charge on the funds and property of the Society.' The words 'as occasion may require,' when read in connection with the rest of the rules, necessarily mean, when and as there may be occasion to borrow money for the purposes and objects of the Society, as defined by Rule 1. Any borrowing for other purposes, or other objects, would be a breach

of duty of the trustees or directors under those rules, and certainly cannot be taken to be authorized by the terms of the 32nd rule. In point of fact no money was borrowed or applied for any unauthorized purposes.

"The 32nd rule has all the force and authority which it can derive from the mutual contract and agreement of the members of the Society, and from the certificate and allowance of the barrister appointed for that purpose under the Friendly Societies Acts, incorporated (by reference) into the Act 6 & 7, Will. 4 c. 32, under which this Society was formed. Unless, therefore, it was illegal and ultra vires for the members of such a Society to make, and for the barrister to allow and certify such a rule, the debts contracted by virtue of it are well charged upon the general funds and property of the Society, and ought to be allowed and provided for out of such funds and property, in priority to the shares and interests of all classes of members."

The Lord Chancellor held that the words "as occasion may require" were within the Act; and that Rule 32 was valid. Lord Blackburn concurred, remarking (at 548) that 6 and 7 Wm. IV, c. 32, was not artificially drawn. In the Court below, Jessel, M. R, had said of the Act (23 Ch. D. at 458): "There is no provision here as to investing members. It looks as if everybody was to get an advance, and that the framers of the Act were forgetting that the people who made the advance must be somewhere." As to Rule 31, that rule authorized the Directors to issue paid up withdrawable shares for £30 each at 5 per cent. interest with the right of withdrawing, upon notice, the whole or part of the principal in priority to all other shares. This rule was struck out by the certifying barrister; but subsequently, through inadvertence he allowed an amendment to that disallowed (and therefore non-existent) rule. On this question when the case was before the Court of Appeal, (23 Ch. D. at 460) Jessel, M. R., said:

"The first question the Court has to decide depends upon a very peculiar state of circumstances. This Society had its rules printed, and when they were sent to the revising barrister he struck out rule 31, but notwithstanding that it was struck out, the Society continued to insert the rule in their printed books as if it were still in force, and took thousands of pounds from the public on the representation that it was a rule of the Society. I do not intend to impute to the Directors any notion of fraud. I think they were simply guilty of gross carelessness; but it is an extraordinary circumstance that the directors and trustees of the Society should have continued printing the disallowed rule and have taken the money of the public on the assumption that it was still in force. The rule gave the public the option of taking £30 shares, and many persons were induced to take shares under it. What is the position of persons who have paid their money for such shares, and whose money went into the coffers of the Society? It is tolerably plain that, as between them and the Society, the Society on winding up must either admit the validity of their shares, or give them back their money. The Society cannot say to them: 'We represented to you that there was a rule which entitled us to issue such shares, and we got your money by that representation, but as the rule was not certified we are not liable to you in any way.' At a subsequent period, having forgotten that this rule had been struck out, they amended it. In June, 1876, they amended a non-existing rule by inserting '£1' instead of '£30.' The amending rule went to the revising barrister, and I am afraid I cannot acquit him of being a little careless also, for he passed the amendment without satisfying himself as to the existence of the rule. The effect of his certificate was to make the rule which had been struck out a valid rule again, so that after the 19th of June, 1876, this rule existed, but altered by substituting £1 for £30."

The Court of Appeal agreed in holding that the certifying barrister by his subsequent allowance of the amendment to the by-law had cured the illegality of the original by-law and that the £30 shares issued under the original by-law were accordingly valid. This decision which was affirmed by the House of Lords (9 App. Cases 440 *subnomine* Murray *v.* Scott) simply illustrates a case of estoppel against the Company. The law of registration is further illustrated by Droitwich Salt Co'y *v.* Curzon, L.R. 3 Ex. 35, where the defendant was the Registrar of Joint Stock Companies, and the Court of Exchequer was asked to grant a writ of mandamus to compel the Registrar to register a certain rearrangement of the capital of the plaintiff Company.

In giving judgment, in which Bramwell, Channell, and Pigott, B. B., concurred, Kelly, C. B., (at p. 40) said :

"The plaintiffs are a company which were in existence long before the passing of the Companies Act, 1862. At the time of the passing of that Act, or rather a short time afterwards, when they called on the Registrar to register them under the Act, their nominal capital was £250,000. But this capital was then farther stated to be 'in 10,000 shares of £25 each, all taken, £25 having been paid on the first 5,000 shares, £15 on the next 1,000 shares, and £5 on the remaining 4,000 shares;' and it was also stated that the last 5,000 shares were issued at £25 each 'for the sums above mentioned' This amounts in substance to a declaration that the actual amount of capital had been reduced from £250,000 to £160,000 thus:—There had been a new issue of 1,000 shares on the original capital of £125,000, at £15 a share, and two subsequent issues of 4,000 shares at £5 each. The aggregate amount subscribed was, therefore, £160,000; and this was the real capital of the company, although their nominal capital amounted to £250,000. It is said that the words in the requisition for registration, 'the last 5,000 shares were issued at £25 each, for the sums above mentioned,' amount to a statement that these shares were to be considered as fully paid up. Probably this is so, and at all events the Registrar entered the company on the register, whether by inadvertence or otherwise, under the Act of 1862, in the manner above described. Subsequently, he was called upon to register a further change in the amount of capital. Resolutions were passed, reducing the capital to £100,000 in 10,000 fully paid up shares of £10 each. These resolutions were sent to the Registrar and were recorded by him. In fact, he ought to have refused to record them. He did, however, perhaps *per incuriam*, enter the reduction of capital. Then he was called upon to register an increase of this reduced capital from £100,000 to £125,000. Notice was duly given to him of the proposed increase, but he refused to record the notice or the amount of the increase. Had he done so, then taking all the entries together as representing the constitution and condition of the company, the entry of £125,000 would have amounted, in fact, to an entry, not of an increase, but a reduction of the nominal capital of £250,000 as originally registered, to £125,000. The question, therefore, really is, whether the company were entitled to reduce their nominal capital, and to call upon the Registrar to enter on the register a minute of that reduction?

"Now, in the case of a company formed under the Act of 1862, and also in the case of a company already formed, which afterwards is registered under the Act, it is imperative on the Registrar to enter on the register the amount of nominal capital. With regard to companies limited by shares formed under the Act, s. 8 enacts that the memorandum of association shall, among other things, contain, 'the amount of capital with which the company proposes to be registered, divided into shares of a certain fixed amount,' and before registration the Registrar (who has to give a certificate which is to be conclusive evidence that all the requisites of the Act in respect of registration have been complied with) must satisfy himself that the matter to be registered—the memorandum of association—contains all the elements prescribed by the different clauses of s. 8, and no alteration in any one of these elements can be made unless expressly authorized (s. 12). The law is the same where an existing company applies for registration. Section 183 provides that, previous to registration, a statement of 'the nominal capital of the company, and the number of shares into which it is divided,' is to be delivered to the Registrar, and his certificate of incorporation is to be conclusive evidence (s 182), that all the requisitions in the Act contained in respect of registration have been complied with. It is quite clear, therefore, that the nominal amount of capital, and the number of shares into which it is divided, must be stated to the Registrar, by whom that amount must then be entered on the register.

"We next have to consider whether an existing company, when once registered, have any power under the Act of 1862, to give effect to a provision contained in their original deed of settlement to reduce their capital. Now, there is an express power given to increase capital (s. 12), but nowhere can there be found an express provision pointing to a power to reduce after once the nominal amount of capital has been registered. Is it then the effect of the 6th clause of s. 196, to enable a company existing

before the Act, and registering under it, to exercise the power of reducing their capital; or rather, is it the effect of that article to legalize the continuance of a power already possessed under the original deed of settlement or articles of association? The language of the 6th clause is as follows (his lordship read the clause), and as far as that language goes it is not contended that there is anything in it to render lawful a reduction of capital. But there follows a proviso in these terms:—'Nothing herein contained shall derogate from any power of altering its constitution or regulations which may be vested in any company registering under this Act in pursuance of this part thereof by virtue of any Act of Parliament, deed of settlement, etc., constituting or regulating the company.' Now, in construing this proviso, I take it that before the word 'power' we ought to introduce the word 'lawful,' and that the proviso means that nothing in the Act is to derogate from any 'lawful power' before possessed by any Company.

"Is this power of reduction, then, a lawful power, a power which could be exercised consistently with justice, and with the objects of the Act? If it applies, we must remember, to a company where the whole amount on the shares has been paid up, there is no reason why it should not apply to a company where a portion only of the nominal amount registered has been paid up, and the shareholders are liable to contribute for the remainder. Now, it is impossible to contend that a company registered with a nominal capital of £250,000 made up of £25 shares of which say, only £15 or £20 is paid, should have power to force the Registrar to register resolutions reducing their capital to the amount actually paid up. If such a proceeding were permitted, the shareholders' liability would be limited not, as was intended, by the amount of their shares, but by the amount of the already paid-up portion of their shares. Justice, the language of the Act, and the intention of the Legislature, alike forbid an interpretation which would lead to such a result. I, therefore, think that the nominal capital of this company having been registered at £250,000, it was not competent to the plaintiffs to reduce the capital. The Registrar should not have registered the resolutions making that reduction, and when he was called on to make a further entry which would have affirmed the previous improper reduction of capital, he was justified in declining to make it. The defendant, therefore, is entitled to our judgment."

Lord Cairns' observation in Holmes' case (cited *supra*) on the difficulty of realizing upon £20 shares as compared with £100 shares would of course apply with still much greater force if the shares, instead of being £20 or $100 shares, were only £2 or $10 shares; $500,000 of 20 per cent.-paid $100 shares is very different in realizable value from $500,000 of 20 per cent.-paid $10 shares. In each such $100 share, $80 is subject to call; in the $10 share $8 is subject to call. The cost of getting judgment for $8 would be as great as for $80, and might easily exceed $8; so that unless the $10 shareholder was a good mark for $8 *and costs*, a liquidator would not be justified in suing. If therefore all the partly paid permanent shares were $10 shares, and the shares were in many hands, or widely scattered, $10 shares would in a liquidation have little practical value as an asset or security to the holders of the Company's debentures or debenture stock. If in the company there were shares of two denominations, say $100 shares and $10 shares, then the practical effect in a liquidation would be to throw the burden of the company's obligations upon the $100 shareholders.

Another important consideration arises from the fact that the Loan Corporations Act, R. S. O. 1897, c. 205, s. 65—continuing the former law, R S. O. 1887, s. 72 (4)—annexes a vote to each share of the company; so that if $100 shares and $10 shares co-existed in the same company, the $100 share and the $10 share would have each the same voting power. If, by a directors' or shareholders' by-law, new shares of very small par value could at any time be issued, prior shareholders holding shares of large par value and contributing the great bulk of the Company's capital might be deprived of all practical influence in the management of the company. The position of creditors of the company might also be most seriously altered to their injury.

For their new departure the directors in their argument resort to the Building Societies Act, R. S. O. 1887, c. 169, the repeal of which took effect on the 1st July, 1897,—60 Vic. c. 38, s. 121 (3). The by-law now in question purports to have been enacted on

the 22nd February, 1898. I think the Company's power to make new departures or new by-laws is to be drawn exclusively from the new Act (R. S. O. 1897, c. 205, s. 67) and not from the old Act. The Company's own declaration of incorporation in the preamble and in article 8 clearly recogniz s this. The language of section 67 of the new Act seems quite clear, and there is nothing to take this case out of the general rule governing repealed statutes. Endlich on Statutes, s. 478; Hardcastle on Statutes, 2nd Ed., 392. In order to repeal the fundamental article of the declaration of incorporation the directors are in the awkward position of having to impeach the instrument that they themselves seven years ago framed and filed under the Building Societies Act, R. S. O. 1887, c. 169. They now say that this declaration is not their charter; that the whole of the now repealed Building Societies Act is their charter. (Memo. p 3) They in effect claim to have a vested right in a public general Act which is now repealed and superseded by another public general Act. This claim is sufficiently answered by the preamble and article 8 of their own declaration of incorporation; but in any case every such claim is disposed of by sec. 8 (45) of the Interpretation Act, R. S. O. 1897, c 1, which continues R. S. O 1887, c. 1, s. 8 (40), and enacts:

"Every Act shall be construed as reserving to the Legislature the power of repealing or amending it, and of revoking, restricting or modifying any power, privilege or advantage thereby vested in or granted to any person or party, whenever the repeal, amendment, revocation, restriction or modification is deemed by the Legislature to be required for the public good."

But even if the repealed Act were continued as the special charter of this Company, that Act would not, I think, give any support to the Company's present by-law.

The directors (p. 1 of their argument) describe the incorporation of their Company under the Building Societies Act (R. S. O. 1887, c. 169) in these words: "A Memo. of Incorporation was signed and duly filed constituting it a terminating loan company, pursuant to the statute." And again at p. 4 the directors say: "The Canadian Mutual Loan and Investment Company never became a permanent society or authorized the issue of any permanent stock under the provisions of R. S. O. 1887, c. 169."

Now, if the Company's declaration or memorandum of incorporation did in fact create a terminating building society or terminating loan company, that would I think at once conclude the present question adversely to the Company. What the Act meant by a terminating society is abundantly clear from section 52 which continues the preamble of section 1 of the Act, 22 Vic. c 45 (of the Province of Canada), passed in 1859, which latter was a mere reflection of English legislation as moulded by the actuary, Arthur Scratchley (Scratchley, Treatise on Benefit Building Societies, 1st Ed., (1849), p. 25; 7th Ed., (1890), p. 19; Endlich on Building Societies, 2nd, Ed., s. 18; Wurtzburg on Building Societies, 3rd Ed, (1895), p. 2; Davis on Building Societies, 4th Ed., (1896), p. 10, 13).

The terminating society intended by section 52 of the Building Societies Act was a corporation in which from the outset a period was fixed for its dissolution. (*Re* Guardian Permanent Benefit Building Society, 23 Ch. D. at 458, per Jessel, M. R.; Wurtzburg on Building Societies, pp. 2-3) This period rarely exceeded ten or eleven years, and never fifteen. In the terminating society the shares were all issued as of the same date, of the same par value, and all matured together. Any person desiring to enter the society after its commencement could do so only on the basis of making such back payments on his shares as would make his membership relate back to the same date as that of the incorporators. (Wurtzburg on Building Societies, 2nd Ed., 120). At the end of the time assigned for the existence of the corporation, the shares became withdrawable and the corporation itself was dissolved. An actual example in Ontario of the terminating society contemplated by the Building Societies Act was The Ottawa Building and Loan Society, which in 1895, after a period of eleven years, matured its shares and dissolved.

In such a terminating society as the Act contemplated, permanent stock or permanent shares are of course out of the question. The Canadian Mutual Loan and Investment Company by article 2 of its declaration named fifty years as the limit of its existence.

This would give color to the argument that the society is a terminating society, though with a very unusual term. But the fact (as alleged) that the Company is a terminating corporation would surely not help the present claim to issue permanent shares. A permanent society could under section 52 of the Building Societies Act (R. S. O. 1887, c. 169) issue terminating shares ; but a terminating society could not from the law as well as from the nature of the case issue permanent shares (secs. 56, 68). Under the English Building Societies Acts permanent shares are unknown ; all shares are terminating, whether issued by a permanent or a terminating society. Wurtzburg (3rd Ed., (1895), p. 162) says :

" It is the right of every investing member of a building society, whether incorporated or unincorporated to retire from the society, and require the return of the amount that he has paid for subscriptions. This right of 'withdrawal' as it is called is an essential part of his contract, and the rules of every society must set forth the terms on which it may be exercised (Building Societies Act 1874 (Imp.) s. 16 (4))."

The argument of the Directors urges the plea that the articles of their declaration exceeded what was necessary to be declared under the Building Societies Act ; and, that, to the extent of such excess, the articles are not binding, or at all events are not unalterable. It is argued that the Act required no more than the signatures of twenty persons declaring their intention to constitute themselves under a stated name a corporation within the meaning of the Act ; and it is argued that all the contents of the declaration in excess of such bare declaration are mere suplusage, or are, at most mere by-laws or regulations which are subject to amendment or repeal. Upon this argument it is to be observed that section 2 of the Building Societies Act (R. S. O. 1887, c. 169) in prescribing the contents of the declaration expressly requires that the corporation be constituted with a stock or fund divided into shares, and further expressly enacts that the par value of the shares must not exceed $400. It can hardly with reason be said therefore that it was not competent, relevant and proper for the corporation in their declaration to show their conformity to law and to declare specifically the amount of the capital and the par value of the shares. At all events, the Building Societies Act nowhere restricted the incorporators from inserting in their declaration particulars additional to those expressly specified in section 2 ; or from safeguarding their interests in any direction they thought necessary.

The law of England in this matter is summed up by Mr. Palmer, a recognized authority on Company law, (Treatise on Company law (1898) p. 18). After specifying the particulars required by the Companies Act 1862, to be inserted in the Memorandum of Association, Mr. Palmer proceeds :

" These are the five leading provisions or conditions in the Memorandum of Association of a Company limited by shares and they are the only provisions which the Act of Parliament requires to be stated therein, but occasionally additional provisions are inserted, —clauses for example defining the rights attached as above mentioned to different classes of shares, rights as regards dividend, voting, and participation in assets in a winding up, and various other matters. There is nothing illegal in the insertion in the Memorandum of Association of such additional provisions, but it must be borne in mind that, if inserted these become conditions of the Company's constitution within the meaning of section 12 of the Companies Act, 1862 ; and the rule is that such a condition cannot be altered, and that nothing can be done in contravention thereof.—a conclusion of law which may prove embarrasing to the Company."

The leading case upon this question is Ashbury *v.* Watson 28 Ch. D., 56 ; affirmed on appeal 30 Ch. D. 376 (1885) ; cf. Palmer on Company law (1889) pp. 18, 273 ; Buckley on the Companies Acts 7th Ed. (1897) p. 19 ; Beach on Private Corporations s. 44. See also Thompson on Building Associations (1892) secs. 2 and 3, and the U. S. cases, Becket *v.* Uniontown Building &c. Association 88 Pa. St. 211 ; Albright *v.* Lafayette &c. Building Association 102 Pa. St. 411 at 423 ; Eastern Plank Road Co. *v.* Vaughan 14 N. Y. 546

In the leading case, Ashbury *v.* Watson, Kay, J. (at p. 61 of 28 Ch. D.) said :

"In the first place I have to determine whether the resolutions of 1872 could be so confirmed. If they were, like the transaction in Ashbury Railway Carriage and Iron Co'y. *v.* Riche L. R. 7 H. L 653, entirely *ultra vires* of the Company in general meeting, then it is admitted, as was decided in that case, that if all the shareholders were *sui juris* and expressly agreed to confirm them, they could not do so. But it is said that this is not the case, for although they purported to alter certain provisions in the Memorandum of Association, *yet those provisions were not mentioned in the 8th section of the Companies Act 1862, and therefore need not have been put into the Memorandum, and accordingly it is argued that the alteration of them is not ultra vires in that sense.* But as I understand the decision of the House of Lords, the Memorandum of Association is the charter of the Company, *and any provisions therein which are an essential part of the constitution of the Company* cannot be altered in any manner ; and unless I am bound by equal authority to hold otherwise, it seems to me that the provisions in this Memorandum come within the rule"

So, on the appeal, Fry, L. J. said (30 Ch. D. at 386) :

"The Master of Rolls has suggested to me that the language which I have used may be thought to import that no condition in a Memorandum of Association is essential unless it be required by section 8 of the Act. By essential condition I mean that which in fact is part of the essence of the constitution of the Company, *whether required by Statute or not*"

In the case of the Canadian Mutual Loan and Investment Company the incorporators had it in hand to create a company with a capital limited by shares ; and they made it part of the 3rd Article in their declaration that the capital of their Company shall consist of 500,000 shares of a par value of $100 each If the insertion of this article was in excess of the literal or imperative requirements of the Building Societies Act, then the question is, does this creation of the share capital form, (to use Lord Justice Fry's words), "part of the essence of the constitution of the Company, whether required by Statute or not." In a company created under the Building Society Act the members of the corporation consist of the shareholders, and, until the capital is created and divided into shares, there can be no shareholders. The declaration of the capital and the division of that capital are therefore fundamental.

In his Treatise on Company law (1898) at p. 53, Mr. Palmer says :

"Every Company limited by shares has a capital. This capital as one of the essential features in the Company's constitution is to be mentioned in the Memorandum of Association, and the capital so mentioned is to be divided into shares of a certain fixed amount. What the amount shall be and into what shares it shall be divided is left to the subscribers to the Memorandum of Association to determine ; *but when determined it constitutes one of the fundamental conditions of the Company's constitution, and accordingly can only be altered in the manner provided for in the Acts.*"

The effect of the decided cases therefore is that where the amount of the capital and the par value of the share are without reservation fixed by the instrument of incorporation, whether such fixing is done pursuant to Statute, or, not being required by Statute, is done voluntarily by the incorporators themselves, then, apart from express statutory power, neither the directors nor the shareholders can by any act of theirs alter either the amount of the capital or the par value of the share And even where very large general powers are reserved to the shareholders to alter the instrument of association, but the alteration touches the capital or the shares, the courts have construed the reserved powers very strictly. In Smith *v.* Goldsworthy, 4 Q B. 430, the deed of settlement declared by clause 29 that it should be lawful for "a special general meeting to amend, alter or annul either wholly or in part, any or all of the existing provisions of the deed, and to make any new or other regulations in lieu thereof ; and such new regulations," etc., after certain confirmation, should "be binding and conclusive upon the shareholders" The deed of settlement provided that the capital should be £2,000,000, divided into 20,000 shares of £100 each. By resolutions passed and confirmed at meetings duly convened and held

it was resolved that the capital be reduced to £1,000,000 in £50 shares. The Court of Queen's Bench held that such reduction was ultra vires of the Company. Denman, C.J., in delivering the judgment of the Court, (at p. 465) said :—

"The amount of shares is properly part of the constitution of the Company and does not strictly depend upon any clause, regulation or provision of the deed. The alteration of the shares seems therefore not to come within the meaning of the 29th clause. . . . The defendant further answers that the effect of the resolutions reducing the shares was to dissolve the Company. We do not think that any such effect followed, but rather that they were simply void and inoperative. We think the shares always were in point of law £100 shares."

In the case of the present Company not only does the declaration of incorporation by article 3, fix the amount of the capital and the par value of the share, but by article 8 (cited above) the declaration, while empowering the directors "to make, adopt, amend, alter or repeal any and all by-laws necessary for the conducting of the business of said Corporation," expressly provides that such by-laws must not "conflict with these articles." It is argued by the directors that this prohibition applies only to directors' by-laws, not to shareholders' by-laws. I think that the intention of the 8th article was to define the limits of by-law-making by whomsoever exercised. The reason why the directors are specified is obviously that (so far as appears from either the declaration or the by-laws) the three directors took to themselves the sole right of making or amending the by-laws of the Company. Even in the present by-laws of the Company as revised in 1898, the by-law (in article IX) dealing with the amendments of the by-laws purports to continue this status. The words of the by-law are :—

"These by-laws, upon notice of motion for one month, may be amended at any regular meeting of the Board of Directors, or at a special meeting of the Board of Directors called for that purpose, but no amendments shall be made unless approved by at least three members of the Board."

The shareholders are nowhere recognized in the by-laws, either past or present, as having any power of making or amending by-laws; nor even as having any right of adopting the by-laws made for them by the directors. The power "to adopt" as well as to "make, amend, alter or repeal" is expressly conferred on the directors by the 8th article of the declaration. The same persons having fashioned the declaration and the by-laws, it is surely explicable why the declaration when intending to say that no by-laws of the Company shall conflict with the declaration of incorporation, said, "the directors" shall not make such conflicting by-laws. But even if this prohibition had been altogether omitted from the declaration, the fundamental article defining the amount of the capital and the par value of the shares would, upon the authorities above cited, have been unalterable by any by-law either of the directors or the shareholders.

In the Statute (R. S. O. 1887, c. 169) there was no color of authority for altering the amount of the capital or the par value of the share. Section 62 of that Act applied to permanent societies, not to terminating; and the present company describes itself as terminating. That section, though empowering directors to fix the amount payable on the shares, does not give authority to alter the par value of the shares. If, as now claimed, a company could issue $1 shares, or for that matter could issue shares at any number of cents per share, why were fractional shares prohibited by section 58? The same exclusion of fractional shares, is insisted on in sections 14 (1) and 13 (3) of the present Act, R. S. O. 1897, c. 205, which would be quite unmeaning if the company can make shares of any nominal value. It has already been pointed out that the Building Societies Act, R. S. O. 1887, c. 169 by section 79, annexed one vote to each share; and that the present law (R. S. O. 1897, c. 205, s. 65) continues this franchise; but that if this company's contention were to prevail this franchise might be converted into an instrument of great injustice and wrong doing.

In only one section of the Building Societies Act (R. S. O. 1887, c. 169) was there any authority to create shares of a new or different par value, and that was in section 77. There a new corporation was to be created by the amalgamation of two existing

companies,—whose shares may have been of different par values or of different market values. It is to be observed with what minute care the Act (secs. 78, 79) guarded the interests of the shareholders of each of the two companies so that the fullest information must be laid before the shareholders of each company as to the proposed conversion of their shares; and then, in order to effectuate the conversion, it was necessary that in each company a ballot be had of the shareholders, and that *two-thirds of all the shareholders of each of the two companies* assent to the conversion. Then, by section 79, the instrument converting the old shares into the new shares, certified by the secretary of each company under its seal to have been so assented to by two-thirds of all the shareholders of each company, was to be filed with the Provincial Government as a conclusive record. If the contention now set up were sound, then at the very next general meeting of the amalgamated company, the value of the vote thus annexed by section 72 (4) to each share in the new company might be destroyed by the issue of shares at a merely nominal par value. This cannot have been intended by the Act. Nor can it reasonably be argued that, where the Act gave no authority in any other case than that specified in section 77 to alter the par value of shares, there was nevertheless an implied authority to do so. *Expressio unius est exclusio alterius.* The new Act, R. S. O. 1897, c. 205, contains similar safeguards (secs. 41 to 45) as to the amalgamation of existing companies. Letters Patent incorporating new companies invariably fix the amount of the authorized capital and the par value of the share. No one will contend that the company can by any directors' or shareholders' by-law alter the status so fixed; the procedure where a sufficient case can be shown), is to petition for Supplementary Letters patent. Where in a proper case, sufficient cause is shown for making fundamental changes in the constitution of the company, the Loan Corporations Act by sect. 7 (2) empowers the Lieutenant-Governor in Council to grant reincorporation by Letters Patent issued under the Act.

The directors in their argument represent that, though the fifth article of the declaration constitutes a board of three directors, the Registrar thought that the number might validly be increased in spite of that article; and therein the directors deem the Registrar inconsistent in his rulings. The position taken by the Registrar was, that this company as to its directorate and management was not in conformity either with the old Act or with the new Act; and that in making the necessary changes the new Act and not the old Act must be observed; also that, where the declaration itself was in conflict with the Acts,—both old and new,—the new Act must prevail. As the Registrar's action in granting registry has been imported into the directors' argument, it becomes necessary to set out the circumstances particularly. When this company applied for registry under the Loan Corporations Act, a very anomalous condition of affairs had grown up, partly under the declaration and by-laws, and partly in contravention of them. In any society (whether terminating or permanent) incorporated under the Building Societies Act, it was the clear intention of the law that the administration and financial control of the society should reside in the shareholders assembled annually or oftener in general meeting. The directors were to be a committee from time to time elected by the shareholders, and were to exercise such powers as the shareholders delegated to them by by-laws. (Sec. 12.) The funds, realty, effects and securities were to vest in the society (sec. 41); and were not to be diverted or misapplied (sec. 5). Once or oftener in each year the funds and effects of the society were to be brought into a published general statement, "specifying in whose custody or possession such funds or effects are then remaining, together with an account of all sums of money received or expended by or on account of the society since the publication of the preceding periodical statement." (Sec. 43.) Every such periodical statement was to be attested by two or more auditors, members of the society but not directing its affairs; the statement then was to be countersigned by the secretary, and a copy furnished to each shareholder without charge. (Sec. 44.)

Such was the Statute; but the directors wandered far from the Statute.

The fifth article of the declaration relates to the board of directors and is as follows. (I have here numbered the successive paragraphs for more convenient reference) ·

"Fifth.—(1) The first board of directors shall be as follows: Charles Harvey Aston Williams, James Henry Mitchell, Arthur James Jackson.

"(2) The government of said corporation, and the management of the affairs shall be vested in a board of three directors, consisting of a president, a secretary-treasurer, and general manager. All of the directors shall be stockholders of said corporation.

"(3) The first board of directors shall be elected at the first meeting of the stockholders, which meeting shall take place on the first Tuesday in June, 1894, for the purpose of electing directors.

"(4) The officers shall be elected by the board of directors on the first Tuesday in July, 1894.

"(5). The Provisional board shall act for four years or until their successors are elected and qualified."

This 5th article thus constituted a board of only three directors, (naming the persons), and these three directors were to be respectively the President, the Secretary-Treasurer and the General Manager. The declaration by article 2 starts the Company as from the 16th June, 1890; and therefore the effect of sections (3) and (4) of the 5th article was to confer on those directors a four years' term of office. If sub-section (5) is not mere surplusage, it might have the effect of conferring upon those directors a further term of four additional years. Neither in the declaration nor in the by-laws, past or present, is there any statement of the regular term for which in this company a director holds office. The longest term for which under the present law (R.S.O. 1897, c. 205) s. 79) a director can hold office is two years; and in such case the board must consist of not less than four nor more than ten members. The 8th article of the declaration (so far as appears from that instrument) conferred upon those three directors the sole power "to make, adopt, amend, alter or repeal any and all by-laws necessary for the conducting of the business of said Corporation". This power was further re-inforced by article IX of the by-laws filed with the Application for Registry. That by-law was identical in terms with the by-law above cited from the revision of 1898, and purported to vest in the three directors the only power of amending by-laws which is to be found anywhere in the by-laws. In this matter both the declaration and the by-laws were in direct contravention of the Statute. The power of making and amending by-laws in a *terminating* Society was by section 3 of the Statute (R.S.O. 1887, c. 169) vested exclusively in the shareholders assembled in general meeting. The amendment of by-laws could only be had at a special general meeting of shareholders called on a requisition signed by not less than fifteen shareholders. Sec. 10 (1). Of such special meeting notice had to be mailed to each shareholder within fifteen days after the requisition, and the notice was to set out the proposed amendments (sec. 10 (1)). In such general meeting before any rule or by-law of the Society could be altered, repealed or amended, the Act required a two-thirds majority which must further represent not less than one-half the amount paid up on investing shares (sec. 10 (2)). In a *permanent* building society the directors might propose by-laws which however had no "binding force until confirmed at a general meeting of the shareholders of the society upon a vote of two-thirds of the capital stock represented at the meeting, notice being given of the proposed changes in the notice calling the meeting." (sec. 72.) But the shareholders themselves at such a general meeting could take the initiative and by a like vote alter or amend such proposed by-laws. (s. 72 (3)).

So that, whether the present Company was a terminating or a permanent society, the power taken by its directors in the declaration and by-laws to make and amend by-laws without reference to the shareholders was entirely *ultra vires*

Then as to the funds of the society. The declaration, by the 6th article, divided the whole moneys of the corporation into two funds—the Loan Fund and the Expense Fund. The text of the article is as follows:—

"Sixth—The moneys of the Corporation shall be divided into two funds, one of which shall be called the "Loan Fund" which shall be made up of all moneys received on account of subscriptions of the Corporation Stock, all net incomes and profits thereof,

and all fines and forfeitures which shall be collected from members or stockholders under the by-laws; the other shall be termed an Expense Fund, which shall be provided for in the by-law, and shall be used for the payment of salaries and other current expenses."

Both the Loan Fund and the Expense Fund were by Statute (R.S.O. 1887, c. 169, s. 41) vested in the Society; and under the sections above cited as well as by the general law governing such relations, the directors were accountable to the shareholders as trustees of both funds. Re Forest of Dean Coal Mining Co. 10 Ch. D. at 453; Joint Stock Discount Co. *v.* Brown 8 Eq. 381; Flitcroft's case 21 Ch. D. 519; Pelly's case *Ibid* 492; Re Oxford Benefit and Building and Investment Society 35 Ch. D at 509; Re Leeds Estate Building and Investment Co. *v.* Shepherd 36 Ch. D. at 797-8; Re Faure Electric Accumulator Co. 40 Ch. D. at 150 sqq; Masonic and General Life Assurance Co. *v.* Sharpe (1892) 1 Ch. 154; Re Lands Allotment Co. (1894) 1 Ch. at 631; Palmer *Company Law* (1898) 120-2.

The 7th Article of the declaration incorporating the Canadian Mutual Loan and Investment Company empowered the directors to appoint *either* three trustees *or* a trusts corporation for the custody and safekeeping of the loan fund. The text of the 7th Article is as follows:

"Seventh—The Board of Directors shall, at its first meeting, or at any meeting thereafter, appoint a trustee of the said 'Loan Fund,' said trustee shall be three or more persons, or a Corporation incorporated under the laws of Canada as a Trust Company. And the said Board of Directors may, by resolution, enter into any such contract or agreement in writing with said trustee for the custody and safe-keeping of the said 'Loan Fund' by said trustee as shall secure the said fund and its investments and accumulations for the use and benefit of the stockholders of the said Corporation."

What the above article intended to be done seems very plain: appoint *either* three trustees *or* a trusts corporation. What was done was to appoint *both*. A trusts corporation was appointed custodian of all loan moneys, accumulations and securities; and this is all the article called for or authorized. But besides this, under the designation of trustees, three special officers were added to the loan company, who in respect of any matter touching the loan fund were to be in effect loan fund directors. In respect of any loan fund matter they were to exercise authority co-ordinate with the three general directors, the counter-signatures of at least two of those three trustees being necessary before the trusts corporation could honor any order of the directors and either pay out money or deliver over securities. For purposes of this arrangement an indenture dated the 30th October, 1890, was executed between the trusts corporation and the loan company, the trusts corporation agreeing to become the depositee of such moneys and securities as may be delivered to it; and to pay the money or deliver over the securities upon the above order. Under this arrangement, the loan fund was administered by what were in effect (though not known to the statute) two co-ordinate governing boards (By-laws (1897) Articles V. and VI.) The auditing of the loan fund accounts was committed to one of the three trustees who combined with his direction of the loan fund the inconsistent position of general auditor of the company. (See R. S. O. 1887, c. 169, s. 44; R. S. O. 1897, c. 205, s. 92 (1)).

The Expense Fund was left to the directors to administer. This Expense Fund was constituted principally of membership fees and of certain percentages of the monthly payments made by members on their shares. (By-laws (1897), Article III., s. 1.) For example, in the case of certain subscribed shares of $100 par value, 60 cents per share is payable to the Society every month until the directors declare the share to have attained its maturity or par value of $100. Of that 60 cents, 10 cents is carried to the Expense Fund and 50 cents to the Loan Fund. This Expense Fund was until recently dealt with in a way which was plainly against the intention of the statute law (R. S. O. 1887, c. 169, secs. 18, 20, 41, 42, continued by R. S. O. 1897, c. 205, secs. 96-8); and there was certainly no suggestion of such dealing in the declaration of incorporation. The three directors who constituted the board and were also respectively the President, the Secretary-

Treasurer and the General Manager, took the whole Expense Fund to their own use; and on the other hand they personally assumed the working expenses of the company, including in those expenses the remuneration of the three trustees of the Loan Fund.

When the Company in 1897 applied for registration under the Loan Corporations Act, the Registrar pointed out that the election of separate trustees of the Loan Fund might easily mislead the public, and even the directors themselves, as to the fact that, under the law, the directors are accountable for and personally liable as trustees of the Loan Fund as of all other funds of the Society. The Registrar therefore suggested that the three trustees of the Loan Fund be elected not as such trustees, (for which there is no warrant in the Statute) but as directors, thus raising the number of directors from three to six; so that for purposes of orders on the trusts corporation there would be the signatures of four directors instead of, as hitherto, the signatures of two directors and two trustees. The board of directors has since been enlarged; but not in the way suggested. The number of directors has been increased from three to five; but the three trustees of the Loan Fund are continued. (By-laws (1898) Articles V and VI). As to the enlargement of the board of directors, that was a matter of suggestion rather than a positive direction. But as to the management of the Expense Fund, and as to the proper auditing of the accounts the Registrar required evidence that these matters had been corrected. The directors had also, contrary to the law, begun to borrow by taking deposits and by issuing obligations in the nature of debenture stock. The Registrar required that these illegal borrowings cease; and that steps be taken to discharge the debts or obligations already thus incurred. Upon evidence being put in that this also had been done, registry was granted to the Company.

For the taking of those deposits and for the issue of those obligations there were by-laws of the Company purporting to give authority to the directors; but such authority was in clear contravention of the Act; and the by-laws were therefore *ultra vires* of the Company,—that is, were beyond any power which the Company could exercise whether through the directors or through a general meeting of the shareholders.

In the present case also a by-law purports to authorize the issue of permanent capital stock in shares of $10 each, though the par value of all shares is fixed at $100 by the declaration of incorporation (article 3). Now the directors in their argument (p. 11) contend that the Registrar has no authority to call in question a by-law passed by the shareholders in general meeting. This would amount to saying, that no matter how palpable and flagrant a violation of the law has been committed by a company, the act of the company cannot be questioned if the shareholders have passed a by-law directing or authorizing the illegal act to be done. If the Loan Corporations Act really meant this, it would be a most dangerous pitfall for the public. To aid in protecting the numerous persons who deal with loan corporations, that Statute has enacted certain stringent provisions;—for example, as to managing and investing the funds of the corporation (secs. 16–19 and Schd. A (5)); as to the auditing of the accounts (sec. 92 and Schd. A (10)); as to the taking of deposits (secs. 29, 30); and as to the issue of debentures and debenture-stock. (secs. 30, 39). Then loan corporations by means of three separate registers are classified, according to the powers conferred upon them, into Loan Companies, Loaning Land Companies and Trusts Companies. (sec. 104). A Trusts Company must not issue debentures (R.S.O. 1897, c. 206, s. 12): nor on the other hand can a Loan Company assume the powers or duties of a Trusts Company. Where a Loan Company is incorporated by a special Act or instrument it also sometimes happens that apart from the limitations in the public general law, the Act or instrument of incorporation imposes other and additional restrictions. For example, in one case, the deed of settlement, while it authorizes borrowing by the issue of debentures or debenture stock, absolutely forbids the taking of deposits. In another case, a company is by special Act forbidden to lend upon its own stock. In order to secure the observance of the public general law, and to keep each company within the lawful exercise of its powers, the Loan Corporations Act prescribes a system of annual registry corresponding to that under which for some years Insurance corporations of all kinds and classes, have operated in Ontario. When a loan corporation applies for registry, it files with the Registrar *inter alia*, copies of the instruments under

which it became incorporated and from which it derives its powers; copies of its by-laws (Secs. 107, 73); its latest financial statement (sec. 107 (3)); and such further information, material and evidence as the Registrar may direct. (s. 107 (1)). Upon this evidentary material it is the duty of the Registrar to determine (subject to appeal) whether the applicant company is a company required to be registered; and if so, whether it is legally entitled to registry; and, if the company is found entitled, then to register the company upon the proper register; that is, as a Loan Company, a Loaning Land Company, or a Trusts Company, according to the nature of its powers. It is obvious that a company whose by-laws at the date of its initial registry were strictly conformable to law, might, after registry, so amend those by-laws or substitute such new by-laws as to contravene the law, and indeed completely change the status. It is therefore provided by section 72 that, after the company has been registered, it shall file with the Registrar within one month of the passing a certified copy of every addition to, amendment or consolidation of the by-laws made from time to time. And section 67 provides that, in the case of any registered Provincial loan corporation, such by-laws must not be repugnant to the Loan Corporations Act or any other law in force in Ontario. Then every registered loan corporation must (s. 99) also file annually a financial statement giving such information as required by the form. This statement is drawn in such form as to show the company's then condition; also the manner and measure in which it is exercising its lending and its borrowing powers. This material is obviously necessary to enable the Registrar to perform the duties cast upon him by section 109. In ordinary course the certificate of registry runs to the 30th of June of any year (s. 109 (1)); before which time it is the duty of the Registrar to examine the new material that has been filed since the preceding 30th June and determine on the right to renewed registry. (s. 109 (2).) If the corporation "has complied with the law and continued solvent" it is entitled to renewed registry. (s. 109 (3)). The full text of subsections 2 and 3 of section 109 is as follows: —

"(2) To all corporations found entitled to registry, or renewal of registry, and registered accordingly, the Registrar shall issue under his hand and the seal of the department a certificate of registry, initial or renewed, as the case may be, setting forth that it has been made to appear to him that the corporation is entitled to registry as a (*describing the corporation*) under this Act, and that the corporation is accordingly registered for the term stated in the certificate. Every certificate of registry granted under this Act shall specify the first day and also the last day, of the term for which the corporation is registered; and the corporation so registered shall be deemed to be registered from the commencement of the first day to the end of the last day so specified.

"(3) In case of all loan corporations any certificate of registry issued under this Act not being an interim or extended certificate, shall, unless sooner suspended or cancelled, remain valid until the then next ensuing thirtieth day of June inclusive, when if the corporation has complied with the law and continues solvent, the corporation shall be entitled to a certificate of renewed registry, and so, on every succeeding thirtieth day of June thereafter."

If on the contrary the corporation has been breaking the law, or is insolvent, section 112 (1) provides as follows:—

"(1) Upon proof that any registry or certificate of registry has been obtained by fraud or mistake, or that a corporation exists for an illegal purpose, or is insolvent, or has failed to pay its obligations, or has wilfully, and after notice from the Registrar, contravened any of the provisions of this Act, or has ceased to exist, the registry of the corporation may be suspended or cancelled by the Registrar."

All decisions of the Registrar affecting the registry of a corporation are appealable to the Lieutenant-Governor-in-Council, whose decision is final (s. 114).

In granting registry to a company, the Province, as part of its jurisdiction over property and civil rights in the Province, is granting a conditional franchise renewable from year to year. The conditions of that franchise are that the company continues solvent, keeps within its powers, and observes the law in force in the Province. Upon a question

whether the company has committed a breach of those conditions, the fact that a proved breach has been committed under sanction or color of a by-law of the company does not displace the jurisdiction of the Province to suspend or cancel the franchise. A by-law is the ordinary formal expression of a rule or order of a corporation; but the by-law of course depends for its validity upon such questions as whether the corporation had the right to make any such rule or order upon that particular matter, and if the corporation had the right, whether it exercised that right in a lawful manner. The Loan Corporations Act intends that all important rules or orders of the corporation,—such rules or orders being of course within its powers—shall be expressed in the form of recorded by-laws (secs. 67-68). What by-laws a particular company has the right to make is determined by the incorporating act or instrument, subject to the general public law. This is expressly enacted by section 87 as to by-laws made by the shareholders; and by section 88 as to by-laws made by the directors under authority of the shareholders. Where the power to make certain rules or orders already resides in the shareholders or directors respectively, those sections regulate the exercise of such power; and authorize the expression by by-laws of such otherwise valid rules and orders. But it is quite clear from the language of the sections themselves that they do not confer original or new powers, or extend existing powers; they merely regulate the exercise of existing powers. Compare also the language of section 26. If, therefore, in any loan corporation, an unlawful rule or order of the corporation takes the form of a shareholders' by-law, that fact does not, as the directors apparently contend, withdraw the unlawful rule or order from the reach of the Loan Corporations Act, or from the jurisdiction of the Provincial officer who has the duty of applying and enforcing that Act.

In the matter, therefore, of the by-law passed on the 22nd February, 1898, by the Canadian Mutual Loan and Investment Company, purporting to create permanent capital stock of $5,000,000, in shares of $10 each,—

I am of opinion that the Registrar of Loan Corporations had and has jurisdiction under the Loan Corporations Act, R. S. O., 1897, c. 205, to examine the said by-law, and to determine whether, in passing that by-law, the company "complied with the law" within the meaning of section 109 (3) of the Loan Corporations Act; and to determine whether that by-law is "repugnant to the provisions of that Act or any other law in force in Ontario," within the meaning of section 67 of the said Act. As the said Registrar, and for purposes of the said Act, I accordingly determine as follows:

1. That by the law in force in Ontario, the declaration of incorporation filed by the said company fixed and fixes the par value of all shares of capital stock in the said company at $100 each;

2. That the company in passing the said by-law has not complied with the law; and

3. That the said by-law purporting to create shares of a par value different from the par value so fixed by the declaration of incorporation is repugnant to the law in force in Ontario, and is *ultra vires* of the company and void.

Given in duplicate this twenty-first day of May, A.D. 1898.

(Signed), J. HOWARD HUNTER,
Registrar of Loan Corporations.

Seal.

UNIVERSITY OF TORONTO

REPORT OF

STANDING COMMITTEE ON FINANCE

1897-8.

(ADOPTED DECEMBER 10th, 1897.)

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO.

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1897.

UNIVERSITY OF TORONTO.

REPORT

OF THE

STANDING COMMITTEE ON FINANCE.

TORONTO, 5TH NOV., 1897.

The Standing Finance Committee beg to submit their report for the year ending 30th June, 1896 :

1. They have obtained from the Bursar the estimates of the receipts on income account for the year ; and from the Bursar and the heads of University departments they have received estimates of the probable expenditures for the year.

2. They also incorporate in their report, for the sake of convenience, the estimates f University College, which have been furnished to the Committee for their information by the Council of University College.

3. The forms of account which were employed in last year's report have been adhered to, and for the purpose of comparison the actual results of the transactions of the year 1896-7 are given.

Estimated Revenue, Year 1897-8.

Account.	Estimate 1897-8.	Receipts 1896-7.
	$ c.	$ c.
(a) Interest on purchase moneys	1,233 25	1,326 25
(b) Interest on mortgages	21,144 04	29,732 77
Interest on debentures	9,609 75	9,781 30
Interest on advance to Medical Faculty	104 25	68 00
(c) Rents, University Park	9,662 50	8,722 87
Rents, Business properties, etc.	3,550 00	3,591 46
Rents, Miscellaneous :		
School of Science site	925 00	925 00
Medical Faculty allowance *re* Biological Building	1,900 00	1,900 00
Board of Health allowance, do	200 00	200 00
(d) City of Toronto, payment	6,000 00	6,000 00
(e) University and College fees	43,500 00	41,503 90
(f) Gymnasium fees	900 00	872 08
(g) Transfer fees (discharge of mortgages, etc.)	40 00	41 50
(h) Interest on advances *re* U. C. C. block	7,235 25	5,330 67
(i) Sundry earnings, land	3,200 00	3,532 00
(k) Interest on bank balances	4,000 00	516 90
(l) Legislative grant	7,000 00	7,000 00
	120,204 04	121,044 70

Deductions.

Interest on the following Special Funds.

Account.	Amount of balance at 30th June, 1897.	Amount of interest.
	$ c.	$ $.
(a) Library Insurance Fund (books)	38,911 41	1,167 34
(b) Residence Extension Fund	828 49	24 84
(c) Vice-Chancellor's special account	686 04	20 58
(d) Retirement Fund	26,564 83	1,593 88
(e) Specific Endowment (scholarships, etc.)	73,497 83	4,163 23
	140,488 60	6,969 87
Estimated revenue	120,204 04	
Deductions	6,969 87	
Amount available	113,234 17	
Deficit brought forward from 1896-7	9,517 28	

REMARKS:

1. The actual deficit of last year was $9,517.28, the estimate of $18,363.54 having been reduced partly by the receipt of the Legislative grant of $7,000 and partly by savings on appropriations.

2. In accordance with the suggestion made in the report of last year, your Committee purpose a reduction of $3,600 in the cost of conducting the Arts Examinations. A considerable reduction has also been effected in the cost of fuel by substituting screenings for egg coal in some of the buildings.

3. Notwithstanding these reductions, the estimated deficit for this year is $6,020.28 It is possible, however, that this may be reduced by the receipt of moneys arising from the sale of the wild lands lately granted by the Legislature.

B. E. WALKER,
Chairman.

Summary of Estimated Expenditure Year, 1897-8.

	Payable out of interest on special funds.	Payable out of ordinary revenue	Expenditure 1896-7.
	$ cts.	$ cts.	$ cts.
1. Salaries and Pensions:			
(a) Salaries (inclusive of Bursar's Office and Retirement Fund)		91,149 00	87,959 09
(b) Pensions		2,800 00	2,800 00
2. Bursar's Office, exclusive of salaries		800 00	792 24
3. Expenses *re* investments, etc		860 00	841 06
4. Scholarships and Fellowships	4,057 50		3,015 00
5. Examiners		2,850 00	6,486 77
6. Insurance		1,800 00	1,641 24
7. Telephones		150 00	150 00
8. Library:			
Customary grant	6,000 00		3,873 14
Maintenance		865 00	648 35
9. Main Building:			
(a) Repairs, maintenance of structure, fuel, water, gas, etc		3,545 00	4,473 89
(b) President's Office		250 00	237 65
(c) Registrar's Office		50 00	50 00
10. Grounds		2,500 00	4,445 94
11. Chemical Department:			
(a) Maintenance of structure		1,145 00	1,280 70
(b) Maintenance of department		400 00	380 35
12. Biological Department:			
Maintenance of structure, fuel, water, gas, etc		1,435 00	1,862 29
Laboratory supplies		400 00	880 36
Students' supplies		968 25	857 50
Physiology		150 00	200 00
13. Physical Department:			
Maintenance		325 00	794 97
Apparatus		275 00	
14. Mineralogical and Geological Department:			
Maintenance		200 00	179 32
Minerals		212 20	125 16
15. Psychological Department—Maintenance		500 00	550 00
16. Mathematical Department			4 50
17. Political Science Department—Class Room supplies, Books		125 00	275 00
18. Classics—Class Room supplies		20 00	9 75
19. English "		150 00	200 00
20. French "		10 00	5 65
21. German "		10 00	3 90
22. Italian and Spanish—Class Room supplies		45 00	6 25
23. Oriental Literature "		25 00	23 94
24. Stationery—University		1,000 00	899 58
25. Printing "		2,500 00	2,524 18
26. Advertising "		150 00	180 82
27. Incidentals "		100 00	48 10
28. Stationery—University College		75 00	26 20
29. Printing "		75 00	42 80
30. Advertising "		150 00	128 65
31. Incidentals "		50 00	25 37
32. Convocation expenses		50 00	118 48
33. Senate elections			
34. Gymnasium—Maintenance		1,150 00	907 29
	10,057 50	119,254 45	129,955 48
Total estimated expenditure out of ordinary income			119,254 45
Total available income (p 5)			113,234 17
Deficit			6,020 28

Detailed Estimate of Expenditure, Year 1897-8.

Salaries.	Estimated amount, year ending 30th June, 1898.	Amount paid year ending 30th June, 1897.
	$ cts.	$ cts.
1. Bursar's Office:		
Bursar	1,600 00	1,242 23
Accountant	1,000 00	1,000 00
	2,600 00	2,242 23
2. Library:		
Librarian (salary at $1,700, for six months, $850; at $1,800, for six months, $900	1,750 00	1,650 00
Assistant (salary at $450, for three months, $112.50; at $500, for nine months, $375	487 50	437 50
Assistant	300 00	300 00
Delivery Clerks, two (salary at $15 per month for eight months)	240 00	246 68
Delivery Clerks, two (salary at $10 per month for eight months)	160 00	166 68
Caretaker (also paid as Gardener)	500 00	500 00
	3,437 50	3,300 86
3. General as between University and University College:		
President (also paid as Professor of Physics)	1,800 00	1,800 00
Janitor	420 00	420 00
Gardener (also paid as Caretaker of the Library)	100 00	100 00
Engineer (with rooms and fuel)	576 00	576 00
Fireman (salary at $35 per month, for eight months)	280 00	301 50
Carpenter	450 00	450 00
Cleaner of buildings	312 00	312 00
Attendant on coat room and lavatory, at $25 per month for seven months	175 00	150 00
	4,113 00	4,109 50
4. Pensions:		
E. J. Chapman	1,800 00	1,800 00
J. M. Hirschfelder	1,000 00	1,000 00
	2,800 00	2,800 00
5. University of Toronto, general:		
Vice-Chancellor		400 00
Registrar (salary at $1,400, for six months, $700; at $1,500, for six months, $750)	1,450 00	1,350 00
Registrar's Assistant (also paid as Lecturer in Greek)	200 00	200 00
Bedel and attendant on Senate	750 00	700 00
Architect	100 00	100 00
	2,500 00	2,750 00
6. Teaching staff, etc., University of Toronto:		
(a) Modern History and Ethnology:		
Professor (salary at $2,700, for three months, $675; at $2,800, for nine months, $2,100)	2,775 00	2,675 00
	2,775 00	2,675 00
(b) Political Science.		
Professor (salary at $2,900, for three months, $725; at $3,000, for nine months, $2,250)	2,975 00	2,875 00
Professor of Constitutional and International Law	1,000 00	1,000 00
Professor of Roman Law, Jurisprudence and History of English Law	1,000 00	1,000 00
Fellow	500 00	500 00
	5,475 00	5,375 00

DETAILED ESTIMATE OF EXPENDITURE, YEAR 1897-8.—*Continued.*

Salaries.	Estimated amount, year ending 30th June, 1898.	Amount paid year ending 30th June, 1897.
	$ c.	$ c.
6. Teaching staff, etc., University of Toronto.—*Continued.*		
(*c*) Mathematics :		
Professor	3,200 00	3,200 00
Lecturer (salary at $1,400, for three months $350 ; at $1,500, for nine months $1,125)	1,475 00	1,350 00
Fellow	500 00	500 00
	5,175 00	5,050 00
(*d*) Physics :		
Professor	3,200 00	3,200 00
Demonstrator	1,800 00	1,800 00
Lecturer (salary at $1,400, for three months $350 ; at $1,500, for nine months $1,125)	1,475 00	1,350 00
Assistant Demonstrator	1,000 00	975 00
Fellow	.....	.....
Mechanical Assistant	1,000 00	987 50
	8,475 00	8,312 50
(*e*) Chemistry :		
Professor	3,200 00	3,200 00
Demonstrator (salary at $1,500, for three months $375 ; at $1,600 for nine months $1,200)	1,575 00	1,450 00
Lecturer (salary at $1,100, for three months, $275 ; at $1,200, for nine months, $900)	1,175 00	1,075 00
Lecture Assistant	500 00	500 00
Fellow	500 00	500 00
Attendant	504 00	504 00
	7,454 00	7,229 00
(*f*) Mineralogy and Geology :		
Professor (Acting)	500 00	500 00
Instructor	600 00	600 00
Attendant	200 00	200 00
	1,300 00	1,300 00
(*g*) Biology :		
Professor	3,200 00	3,200 00
Associate Professor of Physiology (salary at $2,200, for three months $550 ; at $2,300, for nine months $1,725)	2,275 00	2,175 00
Lecturer (salary at $1,400, for three months $350 ; at $1,500, for nine months $1,125)	1,475 00	1,350 0
Assistant Demonstrator	1,000 00	1,050 00
Fellow	500 00	500 00
Sub-Curator of Museum (salary at $708, for three months $177 ; at $750, for nine months $562.50)	739 50	697 50
Attendant and Caretaker	500 00	500 00
Boy cleaner	180 00	180 00
	9,869 50	9,652 00
(*h*) Italian and Spanish :		
Associate Professor (salary at $2,200, for three months $550 ; at $2,300, for nine months $1,725)	2,275 00	2,175 00
Temporary Instructor in Italian	250 00	250 00
Temporary Instructor in Spanish	50 00	37 50
	2,575 00	2,462 50

DETAILED ESTIMATE OF EXPENDITURE, YEAR, 1897-8.—*Continued.*

Salaries.	Estimated amount, year ending 30th June, 1898.	Amount paid year ending 30th June, 1897.
	$ c.	$ c.
6. Teaching staff, etc., University of Toronto—*Continued.*		
(*i*) Logic and Metaphysics:		
Lecturer and Demonstrator in Psychology	1,800 00	1,725 00
Lecturer in Philosophy	1,100 00	1,075 00
	2,900 00	2,800 00
7. Teaching staff, University College:		
(*k*) Ethics:		
Professor (salary at $3,100, for three months, $775; at $3,200 for nine months, $2,400)	3,175 00	3,075 00
	3,175 00	3,075 00
(*l*) Greek:		
Professor	3,200 00	3,200 00
Lecturer (salary at $1,300, for three months, $325; at $1,400, for nine months, $1,050)	1,375 00	1,250 00
	4,575 00	4,450 00
(*m*) Latin:		
Professor (salary at $2,600, for three months, $650; at $2,700, for nine months, $2,025)	2,675 00	2,575 00
Lecturer (salary at $1,500, for three months $375; at $1,600, for nine months $1,200)	1,575 00	1,450 00
Lecturer (salary at $1,000, for three months $250; at $1,100, for nine months $825)	1,075 00	750 00
	5,325 00	4,775 00
(*n*) Oriental Literature:		
Professor (salary at $2,900, for three months $725; at $3,000, for nine months $2,250)	2,975 00	2,875 00
Lecturer (salary at $1,000, for three months $250; at $1,100, for nine months $825)	1,075 00	950 00
	4,050 00	3,825 00
(*o*) English:		
Professor	3,200 00	3,200 00
Lecturer	1,800 00	1,800 00
	5,000 00	5,000 00
(*p*) French:		
Associate Professor (salary at $2,200, for three months $550; at $2,300, for nine months $1,725)	2,275 00	2,175 00
Lecturer (salary at $1,500, for three months $375; at $1,600, for nine months, $1,200)	1,575 00	1,450 00
Temporary Instructor	500 00	400 00
	4,350 00	4,025 00
(*q*) German:		
Associate Professor (salary at $2,300, for three months $575; at $2,400, for nine months $1,800)	2,375 00	2,275 00
Lecturer (salary at $1 500, for three months $375; at $1,600, for nine months $1,200)	1,575 00	1,450 00
Instructor (salary at $700, for three months $175; at $800, for nine months $600)	775 00	525 00
	4,725 00	4,250 00
8. Gymnasium:		
Instructor	800 00	800 00
Caretaker	500 00	500 00
	1,300 00	1,300 00

DETAILED ESTIMATE OF EXPENDITURE, YEAR 1897-8.—*Continued.*

Expenses.	Payable out of interest on special funds.	Paid out of ordinary revenue.	Amount paid 1896-7.
	$ c.	$ c.	$ c.
2. Bursar's office:			
Stationery, printing, postage and incidentals		500 00	492 24
Auditor		300 00	300 00
		800 00	792 24
3. Expenses *re* investments, etc.:			
Law costs		500 00	540 46
General incidentals (including commission on loans)		300 00	300 60
		800 00	841 06
4. Scholarships and Fellowships:			
(*a*) Scholarships:			
Junior Matriculation:			
1. Prince of Wales	50 00		50 00
Edward Blake Scholarships:			
1*a*. General Proficiency	60 00		60 00
2. "	42 50		
3. "	25 00		
4. "	22 50		22 50
5. "	20 00		20 00
6. "	17 50		
7. "	15 00		15 00
8. " West Durham	25 00		
1. Classics and Mathematics	60 00		60 00
2. "	20 00		20 00
1. Classics and Moderns	60 00		60 00
2. "	42 50		42 50
3. "	20 00		
4. "	17 50		
1. Mathematics and Moderns	60 00		
2. "	20 00		20 00
1. Mathematics and Science	60 00		60 00
2. "	20 00		
1. Moderns and Science	60 00		
2. "	20 00		
1. Mathematics	60 00		60 00
2. "	15 00		
1. Moderns	60 00		
2. "	15 00		15 00
1. Science	60 00		60 00
2. "	15 00		
1. Classics—Mary Mulock	60 00		
2. " "	60 00		
First Year:			
Classics (Moss Scholarship)	60 00		60 00
Modern Languages (Blake Scholarship)	60 00		60 00
Mathematics and Physics (Fulton Scholarship)	60 00		60 00
Natural Science (Fulton Scholarship)	60 00		60 00
Chemistry and Mineralogy } (Fulton Scho'rship)	30 00		60 00
Chemistry and Physics }	30 00		
Political Science (Banker's Scholarship)	70 00		
Second Year:			
Classics (William Mulock Scholarship)	60 00		60 00
Modern Languages (George Brown Scholarship)	60 00		60 00
Political Science (Alexander Mackenzie Scholarship) No. 1	75 00		75 00
Political Science (Alexander Mackenzie Scholarship No. 2	50 00		50 00
Philosophy (John Macdonald Scholarship)	50 00		50 00

DETAILED ESTIMATE OF EXPENDITURE, YEAR 1897-8.—*Continued.*

Expenses.	Payable out of interest on special funds.	Paid out of ordinary revenue.	Amount paid 1896-7.
Scholarships.—*Continued.*			
Second Year:	$ c.	$ c.	$ c.
Mathematics and Physics (William Mulock Scholarship)	60 00		60 00
Natural Science (Blake Scholarship)	60 00		60 00
Chemistry and Mineralogy (Blake Scholarship)	60 00		60 00
Chemistry and Physics (Blake Scholarship)	60 00		60 00
Third Year:			
Classics	60 00		60 00
Modern Languages (Julius Rossin Scholarship)	60 00		60 00
Ethics (John Macdonald Scholarship)	50 00		50 00
Political Science (Alexander Mackenzie Scholarship) No. 1	75 00		75 00
Political Science (Alexander Mackenzie Scholarship) No. 2	50 00		50 00
do extra			75 00
Mathematics and Physics (A. A. A. S. Scholarship)	75 00		75 00
Natural Science (Daniel Wilson Scholarships):			
Div. I	30 00		60 00
Div. II	30 00		
Chemistry and Mineralogy (Daniel Wilson Scholarship)	60 00		
Chemistry and Physics (A. A. A. S. Scholarship)	70 00		
Post Graduate:			
Political Science (Ramsay Scholarship)	60 00		60 00
Philosophy (George Paxton Young Memorial Scholarship)	400 00		
Medicine (Brown Memorial Scholarship)	300 00		300 00
(*b*) Graduate Fellowships:			
Alexander Mackenzie Graduate Fellowship in Political Science	375 00		375 00
Alexander Mackenzie Graduate Fellowship in Political Science	375 00		375 00
	4,057 50		3,015 00
Examiners:			
Arts		130 00	4,013 29
Medicine		1,140 00	801 00
Law		150 00	122 68
Engineering and Applied Science		140 00	120 00
Dentistry		285 00	240 00
Agriculture		275 00	254 15
Music		100 00	82 05
Pharmacy		460 00	424 10
Pedagogy		120 00	120 00
Matriculation		50 00	309 50
		2,850 00	6,486 77
6. Insurance:			
For three years, $5,400.00. Proportion charged to revenue of 1897-8		1,800 00	1,641 24
		1,800 00	1,641 24
7. Telephones:			
University (main building)		30 00	30 00
Library		45 00	45 00
Biological building		30 00	30 00
Bursar's office		45 00	45 00
		150 00	150 00

DETAILED ESTIMATE OF EXPENDITURE, YEAR 1897-8—*Continued.*

Expenses.	Payable out of interest on special funds.	Payable out of ordinary revenue.	Amount paid 1896-97.
	$ c.	$ c.	$ c.
8. Library (exclusive of salaries :)			
Customary grant	6,000 00		3,873 14
Maintenance : Fuel		350 00	320 49
Water		40 00	35 94
Gas		10 00	
Cleaning		215 00	210 00
Repairs and incidentals		250 00	81 92
	6,000 00	865 00	4,521 49
9. Main building :			
(*a*) Maintenance—Repairs (carpentry, plumbing and sundries		1,600 00	1,645 69
Fuel		1,600 00	2,540 05
Water		225 00	191 83
Gas		120 00	96 32
(*b*) President's office		250 00	237 65
(*c*) Registrar's office		50 00	50 00
		3,845 00	4,761 54
10. Grounds :			
(*a*) Labor, tools, etc		2,000 00	4,445 94
(*b*) Part of cost of new roads, sidewalks, etc		500 00	
		2,500 00	4,445 94
11. Chemical Department :			
(*a*) Maintenance of Structure—Fuel		550 00	706 02
Gas and electric light		120 00	103 40
Water		75 00	56 46
Cleaning materials		400 00	414 82
Cleaning assistance			
Repairs and incidentals			
		1,145 00	1,280 70
(*b*) Maintenance of Department—Chemicals, etc		400 00	380 35
		400 00	380 35
12. Biological Buildings : Maintenance of structure—			
Fuel		600 00	908 28
Gas and electric light		175 00	149 06
Water		130 00	155 85
House furnishings and cleaning materials		100 00	118 83
Repairs, including carpentry and plumbing		230 00	303 39
Additional attendance and cleaning assistance (exclusive of mineralogical and anatomical rooms)		200 00	226 88
		1,435 00	1,862 29
Biological Department :			
Laboratory—lecture room and Museum supplies		400 00	456 86
Students' laboratory supplies		968 25	857 50
Temporary assistance in Museum			300 00
Projection lantern			123 50
Physiological maintenance		150 00	200 00
		1,518 25	1,937 86
13. Physical Department :			
Maintenance—Supplies		325 00	794 97
Apparatus		275 00	
		600 00	794 97
14. Mineralogical and Geological Department :			
Supplies and sundries, including students' supplies		200 00	179 32
Minerals (addition to Ferrier collection)		212 20	125 16
		412 20	304 48

DETAILED ESTIMATE OF EXPENDITURE, YEAR 1897-8.—*Concluded.*

Expenses.	Payable out of ordinary revenue.	Amount paid 1896-97.
	$ c.	$ c.
15. Psychological Department :		
Maintenance	500 00	550 00
16. Mathematics		
17. Political Science :		
Class room supplies		
Books for departmental Library	125 00	275 00
History :		
Class room supplies		4 50
18. Classics :		
Latin—Class room supplies	20 00	9 75
19. English :		
Class room supplies and provision for reading of essays	150 00	200 00
20. French :		
Books for class room use	10 00	5 65
21. German :		
Books for class room use	10 00	3 90
22. Italian and Spanish :		
Books for class room use	20 00	6 25
Apparatus for experimental Phonetics (Re-vote)	25 00	
	45 00	6 25
23. Oriental literature :		
Books for class room use	25 00	23 94
24. Stationery (University) :		
Office supplies, paper for examinations, postage, etc	1,000 00	899 58
25. Printing (University)	2,500 00	2,524 18
26. Advertising (University)	200 00	180 82
27. Incidentals (University)	100 00	48 10
28. Stationery (University College)	75 00	26 20
29. Printing (University College)	75 00	42 80
30. Advertising (University College)	150 00	128 65
31. Incidentals (University College)	50 00	25 37
32. Convocation expenses	50 00	118 48
33. Senate Elections :		
Allowance to scrutineers		
Postage, printing and incidentals		
34. Gymnasium and Students' Union :		
Fuel	350 00	358 75
Water	100 00	128 64
Gas	100 00	101 51
Cleaning	100 00	90 00
Repairs	300 00	
Incidentals	100 00	228 39
Maintenance of apparatus, labor, etc	100 00	
	1,150 00	907 29

TORONTO, NOVEMBER 10TH, 1897.

JAMES BREBNER, ESQ., B.A.,

Registrar, University of Toronto.

DEAR SIR,—At a meeting of the Board of Trustees, held to-day, the draft Report of the Council of University College and of the Committee of the Senate on Finance, containing estimates of revenue and expenditure, and the Committee's observations on various matters, was read, and, on motion of Mr. A. T. Wood, the Report was approved by the Board.

Yours truly,

J. E. BERKELEY SMITH,

Bursar.

UNIVERSITY OF TORONTO.

AUDITOR'S REPORT

TO THE

BOARD OF TRUSTEES

ON

CAPITAL AND INCOME ACCOUNTS

FOR THE

YEAR ENDING 30TH JUNE, 1897.

(In Continuation of the Tables Given in the Appendices to a Report of the Committee of the Board on Capital and Income Accounts Adopted 8th November, 1893.)

ADOPTED 10TH NOVEMBER, 1897.

TORONTO :
WARWICK BRO'S AND RUTTER, PRINTERS, 68 AND 70 FRONT STREET WEST.
1897.

AUDITOR'S REPORT.

TORONTO, August 25th, 1897.

To the Trustees of the University of Toronto :

GENTLEMEN,—Herewith I beg to present, duly audited, the financial statement for the year ending 30th June, 1897.

In this statement effect has been given to a re-valuation of certain assets pursuant to the terms of the report of a Committee adopted by you on 8th November, 1893. In that report the methods of making the initial valuations were stated, and as these have been somewhat varied, I beg to submit, as a part of this return, the correspondence regarding the re-valuations of 30th June, 1897.

The investments were not included in the re-valuation, but the Bursar has made a careful survey of all the securities and states that the contingent fund is still sufficient for the purpose for which it was created. During the past five years no appropriations have been made to the fund. The deductions therefrom are directly due to reductions in the selling prices of real property. If it be that the full extent of that shrinkage movement can now be measured, the assurance of the Bursar may be accepted. The excellent quality of the investments is shown by the continuous smallness of arrears.

To the balance sheet (Appendix 1) is added a comparison with 1892, which shows investments decreased (in round figures) as follows :

By additions to the equipment of the University		$204,000
By obligations discharged		71,000
By reduction of income reserves :		
Temporarily during 1896-7	$ 2,000	
Accretions collected	7,500	
Contingent fund	9,000	
Annual deficits	19,000	
		37,500
Total decrease		$312,500

In addition to this reduction in volume of investments the ratio of annual earnings thereof was nearly six per cent. in 1892 against about five per cent. for 1897. During 1892-3 your investments earned $60,504.20, an amount some $23,000 greater than the expectation for 1897-8.

As a settlement for certain claims made by the Senate of the University the Provincial Legislature, at its last session, sanctioned the following grants :

1. Seven thousand dollars in cash annually, which is henceforth to be treated as ordinary income; this amount falls somewhat short of replacing the loss resulting from the reduced ratio earned by the present volume of investments.

2. Six parcels of land, each 23,040 acres in extent. These lands, which are yet to be selected, are not to be added to the endowment of the University, nor is the University to have any control thereof, but all receipts (save those from pine timber thereon) are to be treated from year to year as ordinary income. The large deficit upon the past year's revenue account points to the necessity for immediate income.

I have the honor to be, etc.,

W. H. CROSS,
Auditor

APPENDIX 1.

Balance Sheet, 30th June 1897.

Funds.

General Endowments Fund (Schedule 1)	$3,492,553 14
Specific Endowment Funds (Schedule 2)	77,713 89
Retirement Fund (Schedule 3)	26,564 83
Trust Funds (Schedule 4)	42,471 94
Revenue Reservations (Schedule 5)	33,335 46

Liability.

Upper Canada College	20,000 00
	$3,692,644 26

Assets.

Site Lands, Buildings and Contents (Schedule 6)	$1,454,565 18
Unproductive Lands (Schedule 7)	1,031,552 21
Leased Property (Schedule 8)	424,055 62
Investments (Schedule 9)	779,864 13
Past Due Fees (Schedule 10)	2,607 12
	$3,692,644 26

COMPARATIVE STATEMENT.

Quinquennial Term 1892 7.

Item.	30 June. 1892.	30 June, 1897.
General Endowments	$3,386,490 20	$3,492,553 14
Scholarships	41,113 61	77,713 89
Retirement Fund	2,628 53	26,564 83
U. C. C. Endowment	100,000 00	20,000 00
Trust Accounts	93,651 16	42,476 94
Revenue Reservations	70,834 12	33,335 46
	$3,694,717 62	$3,692,644 26
Site Lands	$ 475,362 40	$ 475,362 40
Buildings	640,824 00	798,750 57
Equipment	134,179 95	180,453 21
Unproductive Lands	1,015,969 03	1,031,552 21
Leased Lands	335,851 91	424,054 62
Investments	1,092,530 33	779,864 13
Fees		2,607 12
	$3,694,717 62	$3,692,644 26

SCHEDULE 1.

General Endowments Fund.

Lot in Seymour entered as of $1 in value, sold for $40	$ 39 00		
Lot in Seymour, entered as of $100 in value, sold for $150	50 00		
Further receipts for Avenue frontage	520 51		
Increase arising upon quinquennial re-valuations:			
Physical apparatus	4,165 00		
Mathematical apparatus	220 00		
Psychological apparatus	297 50		
			$5 392 01

Contra.

Library Equipment:			
Yearly depreciation in value of books:—			
1892-3	$3,099 95		
1893-4	3,451 26		
1894-5	3,533 83		
1895 6	3,500 92		
1896-7	3,514 53		
	$17,100 49		
Deduct value of additions during 1896-7 as shown by accession catalogue	$3,954 43		
		$13,146 06	
Main building furniture; ten per cent. reduction		426 80	
Residence furniture; ten per cent. reduction		199 60	
			$13,772 46
A net reduction of			8,380 45
Fund of 30 June 1896			$3,500,933 59
Fund of 30 June 1897			$3,492,553 14

SCHEDULE 2.

Specific Endowment Funds.

Scholarships.

Blake, Matriculation	$20 357 18
Blake, Science & Moderns	3,750 00
Moss, Classics	2,000 00
Daniel Wilson, Natural Sciences	2,000 00
William Mulock, Classics & Mathematics	2,000 00
Mary Mulock, Classics	2,838 74
George Brown, Modern Languages	1,128 34
George Brown, Medical Science	5,391 72
William Ramsay, Political Economy	1,009 42
Julius Rossin, German	1,000 00
Bankers, Political Science,	1,200 00

John Macdonald, Philosophy		$2,030 00
Physics		2,350 00
Prince of Wales Prize, General Proficiency		950 00
Mackenzie Memorial		17,584 60
Fulton		3,291 30
Starr Bequest		4,216 06
Lyle Medal		154 26
Stewart Bequest		1,134 12
Young Memorial		3,328 15
		$77,713 89
Funds as per return 30th June '96	$76,727 70	
Interest appropriation	3,993 69	
Rent—Starr Farm	120 00	
	$80,841 39	
Scholarship Payments 1896-7	3,127 50	
		$77,713 89

SCHEDULE 3.

Retirement fund.

Beneficiaries as on 30th June, 1897.

James Loudon	$3,650 70
Alfred Baker	1,923 66
R. Ramsay Wright	1,923 66
Maurice Hutton	1,923 66
J. W. Alexander	1,923 66
J. G. Hume	1,732 56
J. F. McCurdy	1,301 57
J. E. Berkeley Smith	1,119 22
James Mavor	1,117 89
A. B. Macallum	828 91
W. H. Fraser	828 91
John Squair	828 91
G. M. Wrong	757 15
W. J. Loudon	713 90
D. R. Keys	713 90
W. H. Pike	674 94
H. H. Langton	548 24
W. S. Milner	378 39
J. H. Cameron	378 39
G. H. Needler	378 39
W. L Miller	378 21
John Fletcher	338 71
James Brebner	317 94
August Kirschmann	312 55
A. T. DeLury	290 23
C. A. Chant	290 23
E. C. Jeffrey	290 23
Adam Carruthers	250 26
J. C. McLennan	211 14
Frederick J. Smale	96 60
R. G. Murison	37 87

R. R. Bensley	$37 87	
G. W. Johnston	37 87	
P. Toews	26 51	
		$26,564 83
Fund of 30th June, 1896	$20,333 59	
Contributions 1896 97	4,921 25	
Interest as per terms of Order in Council	1,309 99	
Fund on 30th June, 1897		$26,564 83

SCHEDULE 4.

Trust Accounts

Residence Extension Fund		$ 828 49
Vice-Chancellor's Fund		686 04
Library Funds:		
Insurance	$38,911 41	
German	188 60	
French	88 00	
Greek	30 00	
Italian and Spanish	100 00	
		$39,318 01
Museum Restoration		1,000 00
Daniel Wilson Memorial		81 73
Biological Students' Supply		265 27
Langton Memorial		30 00
Medical Faculty Funds:		
Anatomical	$ 8 75	
Pathological	122 63	
Sanitary Science	28 46	
Gynaecological	50 00	
Materia Medica	57 56	
		267 40
		$42,476 94
Total returns on 30th June, 1896	$42,530 09	
Museum Restoration Fund do	2,000 00	
Interest Appropriation, 1896-7	1,234 09	
Receipts during 1896-7	2,572 47	
	$48,336 65	
Payments during 1896-7	5,859 71	
		$42,476 94

SCHEDULE 5*a*

Revenue Reservations.

Accrued income, 30th June, 1896		$29,179 41
Contingent Fund, 30th June, 1896	$16,349 29	
Charge for 1896-97 as per note below	675 96	
		15,673 33
		$44,852 74

Suspense Account.

Advanced as expenses in connection with selection of land grant under Cap. 59 of 60 Victoria	$500 00	
Expenditures upon grounds made upon Revenue 1897-8 account in advance	1,500 00	
		2,000 00
		$42,852 74

Revenue Account.

Deficit 1896-7, ordinary account	$17,058 55	
Interest on Ferrier payments	80 00	
Income on loans as per note below, written off	514 59	
	$17,653 14	
Special grant under Cap. 59 of 60 Victoria	7,000 00	
	$10,653 14	
Surplus of 30th June, 1896	1,135 86	
		9,517 28
		$33,335 46

Losses on Mortgage loans

Rutledge loan, December, 1889—		
Principal	$456 62	
Interest		$89 42
Fire Premium		10 43
Benson loan, November, 1886—		
Principal	100 00	
Hunter loan, November, 1885—		
Principal	200 00	
Interest		193 85
Darley loan, March, 1884—		
Principal	25 00	
Interest		215 19
Fire Premium		5 70
Carried to Revenue, 1896-7 account		$514 59
	$781 62	
Less Campbell loan, recovery on account written off	105 66	
Carried to Contingent Fund	$675 96	

SCHEDULE 5b.

Income Accrued But Not Due.

Accounts.	30th June, 1896.	30th June, 1897.
Debentures	$ 4,786 47	$ 4,394 25
Mortgages	11,576 36	10,736 19
Park Rentals	4,023 75	4,031 25
School of Science	154 58	154 58
Business Properties	803 84	803 84
City of Toronto	1,500 00	1,500 00
Devonshire Place sales	350 50	291 78
Other purchase moneys	216 10	218 95
(Difference $1,280 76)	$23,411 60	$22,130 84
Agricultural Fees	514 97	414 12
Other Fees	566 00	193 00
	$24,492 57	$22,737 96

SCHEDULE 5c.

Revenue, 1896-7.

Outlay

Appropriations adopted 8th January, 1897 :		
Out of ordinary income	$125,745 83	
As interest upon special funds	6,572 79	
Supplementary appropriations	639 75	
		$132,958 37

Less.

Unused of original appropriations	2,727 20	
		$130,231 17

Income.

Account.	Estimate.	Actual.	
Interest :			
On purchase moneys	$ 1,506 81	$ 1,326 25	
On loans	30,788 86	29,800 77	
On debentures	9 980 77	9,781 30	
On advances to U. C. College	4,948 43	5,330 67	
On bank balances	100 00	516 90	
Rents :			
University Park	8,787 50	8,722 88	
Business properties	3,555 00	3,591 46	
School of Science	925 00	925 00	
Medical Faculty	1,900 00	1,900 00	
Board of Health	200 00	200 00	
City of Toronto payment	6,000 00	6,000 00	
Sundry earnings, land	3,200 00	3,532 00	
Mortgage transfer fees	40 00	41 50	
Fees, University and College	41,000 00	41,503 90	
			113,172 62
	$112,932,37		
Deficit 1896 7 ordinary account			$17,058 55

SCHEDULE 5*d*.

REVENUE EXPENDITURES, 1896-7.

Service.	Original Appropriations.	Supplementary Appropriations.	Unused
Salaries	$88,094 50	.....	$135 41
Pensions	2,800 00	.....	.....
Examiners	7,325 00	.....	838 23
Convocation expenses	125 00	.....	6 52
President's office	250 00	.....	12 35
Bursar's office	900 00	.....	107 76
Registrar's office	50 00	.....	.....
University stationery	1,000 00	.....	100 42
University College stationery	100 00	.....	73 80
University printing	2,750 00	.....	225 82
University College printing	100 00	.....	57 20
University advertising	300 00	.....	119 18
University College advertising	125 00	3 65	.....
University incidentals	150 00	.....	101 90
University College incidentals	75 00	.....	49 63
General incidentals	300 00	60	.....
Law costs	500 00	40 46	.....
Interest on Special Trust Funds	6,572 79	.....	35 02
Telephones	150 00	.....	.....
Insurance	1,652 17	.....	10 93
Grounds	4,500 00	.....	54 06
Main building	4,085 00	388 89	.....
Library building	840 00	.....	191 65
Biological building	1,838 00	24 29	.....
Chemical building	1,350 00	.....	69 30
Gymnasium building	300 00	.....	264 79
Library	1,500 00	.....	1 86
Chemical department	500 00	.....	119 65
Biological department	873 50	6 86	.....
Biological Students' Supply Fund	857 50	.....	.....
Physiological department	200 00	.....	.....
Physical "	825 00	.....	30 03
Mineralogical "	325 16	.....	20 68
Philosophical "	375 00	175 00	.....
Political Science "	305 00	.....	25 50
Classical "	30 00	.....	20 25
English "	200 00	.....	.....
French "	15 00	.....	9 35
German "	10 00	.....	6 10
Italian and Spanish "	45 00	.....	38 75
Oriental "	25 00	.....	1 06
Original appropriations	$132,318 62		
Supplementary appropriations		$639 75	
Appropriations unused			$2 727 20

SCHEDULE 6.

Site Lands, Buildings and Contents

30th June, 1897.

Lands set apart for the use of the University	$475,361 40	
Main building and residence	450,000 00	
Museum building	73,085 42	
Biological building	56,659 88	
Library building	104,245 93	
Chemical building	77,469 88	
Gymnasium building	36,288 46	
Y.M.C.A. Hall	1 00	
South Lodge	1,000 00	
		$1,274,111 97
Library proper	$113,636 53	
Museum proper, fittings, and biological apparatus	24,691 02	
Chemical apparatus	9,975 90	
Mineralogical and Geological apparatus	8,212 16	
Physical apparatus	15,900 00	
Psychological apparatus	1,800 00	
Mathematical apparatus	600 00	
		174,815 61
Main building furniture	$3,841 20	
Residence furniture	1,796 40	
		5,637 60
		$1,454,565 18
Return of 30th June, 1896	$1,460,383 83	
Expenditure on chemical building	444 17	
Additions to Library proper	3,954 43	
Additions to Chemical apparatus	508 96	
Additions to Museum cases	2,318 18	
	$1,467,609 57	
Deduct result of quinquennial re-valuations	13,044 39	
		$1,454,565 18

SCHEDULE 7.

Unproductive Lands.

Hoskin Avenue and Devonshire Place survey	$159,768 74	
Unsurveyed blk. between North Drive and Devonshire Place	217,657 53	
Lots Nos. 51, 52, 54, 69, 70 and 71	91,273 50	
Unsurveyed block east of North Drive	90,351 00	
Lots Nos. 3, 6, 8, 9 and 22 (College Avenue)	70,029 00	
Lots in Port Hope	7,100 00	
Lots near Belleville	1,880 00	
Indian Road property	8,541 60	
Farm lands	152 00	
College Block, King Street, Toronto	384,798 84	
		$1,031,552 21

Return of 30th June, 1896	$1,025,948 54	
Interest upon advances to Trustees of Upper Canada College	5,330 67	
Interest paid to Trustees upon unpaid moneys	1,584 00	
	$1,032,863 21	
Less realizations during years 1896-7	1,311 00	
		1,031,552 21

SCHEDULE 8.

Leased Lands.

30th June, 1897.

Victoria College site	$ 1 00	
Wycliffe College site	2,500 00	
Observatory site	1 00	
School of Science site	18,500 00	
Lands leased to City of Toronto	120,000 00	
Park lands	166,480 00	
Toronto business property	69,600 00	
Caradoc Farm	2,000 00	
Valuation of lands		$379,082 00
Cumberland Building	$13,074 74	
Park Hospital Building (payment authorized by Act of Provincial Legislature)	24,192 21	
Expenditure upon Buildings		37,266 95
Park ground rents :—		
Past due	$ 417 00	
Accrued, but not due	4,031 25	
City of Toronto payment	1,500 00	
School of Science (accrued)	154 58	
Ground rents of business lands :—		
Past due	600 00	
Accrued, but not due	803 84	
Other rents in arrear	200 00	
		7,706 67
		$424,055 62
Return of 30th June, 1896	$399,127 91	
Paid under Cap. 60 of 60 Victoria	24,065 34	
Past due rentals covered by said Act	126 87	
Increase in past due rentals	735 50	
		$424,055 62

SCHEDULE 9.

Investments.

30th June, 1897.

Debentures and Municipal bonds	$193 039 92	
Interest past due	289 92	
Interest accrued, but not due	4,394 25	
		$197,724 09
Loans secured by first mortgage upon real property	$538,544 15	
Advanced as premiums on fire policies	103 18	
Advanced to Medical Faculty	2,085 00	
Interest past due	3,400 48	
Interest accrued, but not due	10,736 19	
		554,869 00
Unpaid purchase money on land sales	$24,757 12	
Interest past due	649 00	
Interest accrued, but not due	510 73	
		25,916 85
Canadian Bank of Commerce, on deposit		1,354 19
		$779,864 13

1896-7, Transactions.

Inwards.

Debentures paid off	$ 4,984 79	
Loans repaid	44,812 65	
Loan losses written off	781 62	
Medical Faculty re-payment	695 00	
Received on account of land sales	6,226 80	
Decreased interest outstanding	214 24	
Withdrawn from Canadian Bank of Commerce	189,008 25	
		$246,723 35

Outwards.

Mortgage re-investments	$ 8,454 97	
Loan to Medical Faculty	1,420 00	
Land sales	200 00	
Deposit in Canadian Bank of Commerce	176 444 47	
		186,519 44
Decrease in volume during 1896 7		$ 60,203 91
Return of 30th June, 1896		840,068 04
Return of 30th June, 1897		$779 864 13

SCHEDULE 10

Fees.

Actual receipts during 1896-7			$42,037 25
Loss by burglary of November 1st, 1896		$2,459 50	
Repaid by the Bursar	$ 400 00		
To be repaid by the Bursar	2,000 00		
		2,400 00	
			59 50
			$41,977 75
Arrears of fees on 30th June, 1896		$1,080 97	
" " 1897		607 12	
			473 85
Fees of 1896-7			$41,503 90

1895-6, Arrears.

Written off as irrecoverable :—		
1895-6, Dentistry Degree	$ 15 00	
1895-6, Matriculation	10 00	
1894-5, one B.A. degree	10 00	
1894-5, six M.B. degrees	120 00	
1894-5, ten D.D.S. degrees	150 00	
1894-5, four L.L.B. degrees	80 00	
1894-5, one instruction fee	3 00	
Written off	$388 00	
Collections during 1896-7	603 00	
Agricultural fees arrears	89 97	
Arrears of 30th June, 1896	$1,080 97	

Arrears on 30th June, 1897.

Agricultural arrears 30th June, 1896		$514 97	
Received from Department		425 00	
		$ 89 97	
Seven degrees, 1896-7		70 00	
Examination outlays, 1896-7		254 15	
Due by Department of Agriculture			$414 12
Unpaid of loss of burglary			2,000 00
Five registration fees, 1896-7		$150 00	
One M.A. degree, 1896-7		20 00	
One examination fee, 1896-7		10 00	
Five library fees, 1896-7		10 00	
One laboratory fee, 1896-7		3 00	
			193 00
Arrears on 30th June, 1897			$2,607 12

APPENDIX 2.

Fees Received, 1896-7.

Faculty of Arts.

Subject.	1st Year	2nd Year.	3rd Year.	4th Year.	Miscellaneous.
	$ c.	$ c.	$ c.	$ c.	$ c.
College fees	4,336 00	4,898 00	3,475 00	3,360 00	.....
Penalties	38 00	72 00	30 00	42 00	.....
Dispensations	102 00	138 00	100 00	230 00	.....
Honor Certificate	.....	2 00	1 00	6 00	55 00
Matriculation	.....	.....	.....	.....	227 00
Ad Eundem	24 00	24 00	16 00	36 00	.....
Examination	2,294 00	2,660 00	1,935 00	2,195 00	750 00
Degrees	.....	.....	.....	1,680 00	450 00
Chemical supply	30 00	83 00	47 00	.....	.....
Mineralogical supply	.....	20 00	10 00	40 00	.....
Biological "	50 00	87 75	160 00	450 00	1 50
Physical "	68 00	59 00	171 00	60 00	8 00
Psychological "	.....	2 00	20 00	104 00	.....
Library	308 00	410 00	328 00	322 00	.....
Medical Students:					
Matriculation	30 00	30 00	.....	10 00	5 00
Ad Eundem	.....	6 00	.....	18 00	6 00
Honor Certificate	.....	.....	.....	1 00	1 00
Examination	460 00	610 00	150 00	400 00	60 00
Degrees	.....	.....	.....	780 00	80 00
Chemical supply	141 00	156 00	.....	.....	3 00
Biological supply	72 00	147 00	.....	.....	.....
Instruction to Medical Faculty in Arts Subjects	658 00	795 00	.....	.....	.....
Instruction to Practical Science Students	734 00	293 00	42 00	.....	.....
Totals	9,345 00	10,492 75	6,485 00	9,734 00	1,646 50

APPENDIX 2.—*Continued.*

Subject.	Law.	Dentistry.	Engineering and Applied Science.	Music.	Pharmacy.	Pedagogy
	$ c.	$ c.	$ c.	$ c.	$ c.	$ c.
Matriculation	65 00	310 00	.....	55 00	260 00	.....
Examination	170 00	520 00	80 00	120 00	520 00	30 00
Practical Examination	.....	.....	.....	.....	104 00	.....
Degrees	340 00	645 00	90 00	20 00	520 00	60 00
Totals	575 00	1,475 00	170 00	195 00	1,404 00	90 00

Summary of Receipts.

First year fees	$ 9,345 00	
Second year fees	10,492 75	
Third year fees	6,485 00	
Fourth year fees	9,734 00	
Miscellaneous fees	1,646 50	
Law fees	575 00	
Dentistry fees	1,475 00	
Engineering fees	170 00	
Music fees	195 00	
Pharmacy fees	1,404 00	
Pedagogy fees	90 00	
Agricultural fees	425 00	
		$42,037 25

Classification.

College Fees	$16,069 00
Penalties	182 00
Dispensations	570 00
Honor Certificates	66 00
Matriculation	992 00
Ad eundem	130 00
Examination	12,954 00
Practical Examination	104 00
Degrees	4,665 00
Chemical Supply	460 00
Mineralogical do	70 00
Biological do	968 25
Physical do	366 00
Psychological do	126 00
Library	1,368 00
Instruction to Medical Faculty, Art subjects	1,453 00
Instruction to Practical Science Students	1,069 00
Agriculture, payment by Government	425 00
	$42,037 25

APPENDIX 3.

Medical Faculty Fees.

First year	$ 4,570 00		
Less Arts portion	658 00		
		$ 3,912 00	
Second year	$ 4,675 00		
Less Arts portion	795 00		
		$ 3,880 00	
Third year		4,870 00	
Fourth year		3,425 00	
Summer Session fees		1,520 00	
Miscellaneous fees		790 00	
Registration		305 00	
Collections during 1896-97			$18,702 00

Contra.

Salaries :			
Professors	$ 6,565 00		
Lecturers and Demonstrators	1,845 00		
Assistant Demonstrators	800 00		
Summer Session services	1,520 00		
		$10,730 00	
Wages of Attendants		990 00	
Rentals : -			
Biological building	$ 1,900 00		
Gerrard Street Building	1,000 00		
		$ 2,900 00	
Interest on advance of $1,360 00, expended during 1895 6 upon repairs		68 00	
Repayment on account of advance of $2,780, expended upon repairs during 1895-97		695 00	
Working expenses		3,319 00	
			$18,702 00
1896-7 fees returned as in arrear	$ 310 00		
1895-6 fee returned as included in above collections	75 00		

APPENDIX 4.

University College Residence Account.

Expenditures.

Provisions	$ 1,957 47
Fuel	230 00
Gas	215 82
Maintenance and Utensils	205 85
Laundry	24 34

Steward's Wages	$360 00	
Other charges	473 00	
Allowance to Dean	200 00	
Expended during 1896-7	$3,666 48	
Unpaid Accounts, 30th June, 1897	80 00	
	$3,746 48	
Less paid 1895 96 Accounts	60 00	
		$3,686 48

Income.

Rents	$ 766 95	
Board	2,576 75	
Steward's Sundries	156 50	
Fuel	51 25	
Detriments	17 30	
Fines	33 60	
		3,602 35
Deficit 1896-7 Account		$ 84 13
Surplus 30th June, 1896		329 80
Surplus, 30th June, 1897		$245 67

During 1896-7 the average number in residence was 27.

APPENDIX 5.

CORRESPONDENCE REGARDING REVALUATIONS OF APPARATUS, ETC., 30TH JUNE, 1897.

TORONTO, 30th June, 1897.

W. H. CROSS, Esq., Auditor,
Toronto.

DEAR MR. CROSS,—Referring to your letter of 14th March, addressed to the Chairman of the Board of Trustees, of which you sent me a copy, I have now to report that the revaluation of the books, apparatus, furniture, etc., should be made as follows:

1. *Library (books).* We estimate an average depreciation of 3 per cent. per annum, or 15 per cent. for the quinquennial term which should be taken from the total amount of the account, As this is the most important item, I enclose copy of Mr. Langton's letter, showing how we have arrived at this basis.

2. *Physical Department.* The President values the apparatus and tools in his laboratories at $15,900, which is considerably in advance of the figures shown in the Bursar's books, and is due doubtless to the fact that much valuable apparatus is now manufactured in the University by its own servants. The figures should be increased to agree with the President's valuation, a copy of which is enclosed.

3. *Chemical Department.* As the outlay in this case is quite recent we have not asked Professor Pike for any revaluation. The figures now in the Bursar's books must be substantially correct.

4. *Mathematical Department.* Professor Baker values his present equipment at $600, but without affording any details. The figures in the Bursar's books should be correspondingly increased.

5. *Psychological Department.* Professor Kirschmann values the apparatus in this department at $1,800, to which the figures in the Bursar's books should be increased.

6. *Main Building Furniture and Residence Furniture.* These should be reduced in value by 10 per cent.

7. *Mineralogical Department.* This account now stands at $1,450, the value of certain assaying and other apparatus. To this should now be added

(*a*) Cost of Ferrier collection, including instalment due 15th March, 1898	$5,334 03
(*b*) Cost of mineral cases and incidental expenses	1,428 13
Total	$6,762 16

The total sum representing the Mineralogical Department will thus be $8,212.16. The Ferrier collection has been charged in error to the Museum and Biological Department and the cost of the mineral cases to a special account.

8. *Museum and Biological Department.* Mr. Wright has not kept up an accession catalogue; indeed I doubt if he ever prepared one. It is not practicable at the moment to ascertain what specimens may have been donated during the past five years, although I know that there have been a good many. It seems very desirable that an accession catalogue should be prepared at least for insurance purposes. In the meantime we cannot do better than to start with the original valuation, five years ago, of $14,064, to which should be added

a) The amount spent for museum cases	$9,733 69
b Amount spent for models, specimens, etc.	893 33
Total	$10,627 02

This makes a total at the debit of this department of $24,691.02. Mr. Wright thinks that the purchases each year out of the very small appropriation made from revenues may be set against the deterioration of apparatus, although this is rather an unsatisfactory way of arriving at results.

If I have not been sufficiently explicit let me know.

Yours truly,

B. E. Walker.

University of Toronto, Library,

April 29, 1897.

B. E. Walker, Esq.,

Canadian Bank of Commerce.

Dear Mr. Walker,—On consideration of the present value of the library of books, I estimate that an average depreciation of 3 per cent. per annum of the whole collection has taken place during the last five years. I base my estimate on the following considerations:

1. Rather more than a third of the library consists of sets of periodicals and societies' transactions, the value of which may be taken as constant, for while later volumes could be procured now at less than the publishers' price, the earlier volumes on the other hand are steadily rising in value. The tendency is on the whole an upward one, but the slight decrease in the value of the binding may be set off against it.

2. A small percentage of the monographs, consisting mainly of sets of historical documents and other library series of which limited editions only were published, have risen in value. But the great bulk of the monographs may be said to decrease in value at the rate of 5 per cent. per annum. There is a limit of course to this depreciation, which will be reached I think when 50 per cent. of the catalogued value has been taken off. Allowing something for the increase in value of the minority, the monographs as a whole may be said to have depreciated by 22½ per cent. during five years.

Deducting 22½ per cent. from two-thirds of the catalogued value is equivalent to taking 15 per cent. off the total value.

Yours truly,

H. H. Langton

University of Toronto, President's Office,
June 21, 1897.

Estimate of value of apparatus and tools of Physical Laboratory.

Electricity and magnetism	$4,500 00
Elementary laboratory	900 00
Acoustics	5,000 00
Heat	2,000 00
Optics	2,000 00
Balances, cathetometer, dividing engine, etc	600 00
Workshop, lathes, motors and small tools	900 00
Total	$15,900 00

University of Toronto,
May 11th, 1897.

J. E. Berkeley Smith, Esq., Bursar.

Dear Sir,—The value of the equipment at present in my department may be put down at $600 (six hundred dollars).

Sincerely yours,

Alfred Baker.

Department of Psychology,
University College

J. E. Berkeley Smith, Esq., Bursar.

Dear Sir,—In reply to yours of the 10th inst., *re* the value of the equipment of the Psychological Department, I beg to state that I estimate the present value of the apparatus, furnishings, etc., to be about eighteen hundred dollars ($1,800).

Yours truly,

A. Kirschmann,
Per A. H. Abbott.

June 9th, 1 .

(No. 39).

Copy of an Order in Council directing the payment out of the Surplus Surrogate fees of $500 to His Honour Judge Mosgrove. Presented to the Legislature 9th December, 1897. *Not Printed.*

(No. 40).

Reports of the Principal, and Statements of Bursar of Upper Canada College, shewing receipts and expenditures 1896-97. Presented to the Legislature 16th December, 1897. *Not Printed.*

RETURN

To an Order passed by the Legislative Assembly on the 13th day of December, 1897, for a Return showing the value of the hogs which died, or were slaughtered at the Humber piggery during the outbreak of the cholera in July, 1896.

E. J. DAVIS,

Secretary.

Provincial Secretary's Office,
Toronto, 15th December, 1897.

RETURN

To an Order passed by the Legislative Assembly on the 13th day of December, 1897, for a Return showing the value of the hogs which died, or were slaughtered at the Humber piggery during the outbreak of the cholera in July, 1896.

The value of the stock of hogs which died or were slaughtered at the Humber piggery as a result of the outbreak of cholera in the summer of 1896 is estimated at $2,448.90.

JAMES NOXON,
Inspector.

Department of Asylums and Prisons,
December 15th. 1897.

(No. 42).

Report of the Commissioners appointed to revise and consolidate the Public Statutes of the Province. Presented to the Legislature 23rd December 1897. *Not Printed.*

FIRST REPORT

OF THE

PROVINCIAL MUNICIPAL AUDITOR,

FROM 1ST MAY TO 30TH NOVEMBER,

1897.

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO.

TORONTO:
WARWICK BRO'S & RUTTER, PRINTERS, ETC., 68 AND 70 FRONT STREET WEST.
1898

FIRST REPORT

OF THE

PROVINCIAL MUNICIPAL AUDITOR,

FROM 1ST MAY TO 30TH NOVEMBER,

1897.

PARLIAMENT BUILDINGS,

TORONTO, 14th December, 1897.

To the Honourable The Attorney-General for the Province of Ontario, Toronto:

SIR,—I have the honour to lay before you the following report of what has been done in regard to carrying out the intention of the Government, as laid down in the Act of the Ontario Legislature, 60 Victoria, Chapter 48, entitled "An Act to make better provision for the Keeping and Auditing of Municipal and School Accounts."

On receiving my appointment as Municipal Auditor, my instructions from the Government were to proceed at once to visit as many as possible of the leading municipal offices throughout the Province, to ascertain their mode of keeping accounts, so as to be the better able to judge what system of book-keeping of a uniform character, would be most suitable for the future. In accordance with these instructions I beg to report having visited the municipal offices in the following places and also to having made an inspection of the different books and systems in use by the Treasurers.

In May.

Hamilton	Office of Treasurer	County of Wentworth.
Guelph	do	County of Wellington.
Guelph	do	City of Guelph.
Windsor	do	City of Windsor.
Sandwich	do	County of Essex.
Sandwich	do	Town of Sandwich.
Walkerton	do	County of Bruce.
Walkerton	do	Town of Walkerton.
Cargill	do	Township of Greenock.
Owen Sound	do	County of Grey.
Owen Sound	do	Town of Owen Sound.
Stratford	do	County of Perth.
Stratford	do	City of Stratford

In June.

East Toronto	Office of Treasurer		Village of East Toronto.
Toronto	do		Township of York.
Toronto	do		County of York.
Toronto Junction	do		Town of Toronto Junction.
Cornwall	do		County of Stormont, Dundas and Glengarry.
Cornwall	do		Town of Cornwall.
Brockville	do		Town of Brockville.
Brockville	do		County of Leeds and Grenville.
Kingston	do		County of Frontenac.
Gananoque	do		Town of Gananoque.
Belleville	do		County of Hastings.
Belleville	do		City of Belleville.
Picton	do		Town of Picton.
Picton	do		County of Prince Edward.
Deseronto	do		Town of Deseronto.
Port Hope	do		Town of Port Hope.
Cobourg	do		Town of Cobourg.
Cobourg	do		County of Northumberland.
Peterboro'	do		Town of Peterboro'.
Peterboro'	do		County of Peterboro'.
Niagara Falls	do		Town of Niagara Falls.
St. Catharines	do		City of St. Catharines.
St. Catharines	do		County of Lincoln.
Welland	do		Town of Welland.
Welland	do		County of Welland.

In July.

Barrie	Office of Treasurer		Town of Barrie.
Barrie	do		County of Simcoe.
Orillia	do		Town of Orillia.
Barrie	do	(3 weeks)	County of Simcoe.

In August.

Niagara Falls	Office of Treasurer		Town of Niagara Falls.

In October.

Mattawa	Office of Treasurer		Town of Mattawa.
Mattawa	do		Township of Mattawa.
Mattawa	do		Township of Papineau.
Ottawa	do		County of Carleton.
Kingston	do		County of Frontenac.
Barrie	do		County of Simcoe.

In November.

Dunnville	Office of Treasurer		Village of Dunnville.
Canboro	do		Township of Canboro.
Hamilton	do		County of Wentworth.

It need scarcely be said that my examination of the books of these offices was very cursory, unless it was evident that there was something radically wrong. For instance, when I examined the books of Treasurer Van Luven of Frontenac, it was evident that his accounts were in a deplorable condition and his shortage large. There was also an evident shortage in the accounts of Treasurer Peckham of Niagara Falls, and the County of Simcoe had the greatest defalcation of all, occupying my time nearly a month altogether.

The investigations which disclosed fraud were as follows:

County of Simcoe, S. J. Sandford, Treasurer: deficit $62,857.02.

County of Frontenac, W. T. Van Luven, Treasurer: deficit $31,380.89.

Town of Niagara Falls, J. R. Peckham, Treasurer: deficit $3,000.00.

The last inquiry was not to be considered fraud but a case of bad book-keeping, but the money was lost just the same.

The following investigations were also held:—

Town of Niagara-on-the-Lake.

Township of Manvers.

Township of Roxborough.

Township of St. Joseph.

Ridgetown Collegiate Institute.

These although necessary, disclosed no defalcation or any features of interest outside of their respective communities, and were conducted by the following accountants:—

Mr. T. McCosh, of Paris, Ont., for Niagara Falls and Niagara-on-the-Lake.

Mr. W. A. Douglas, of Toronto, for the Township of Manvers.

Mr. P. B. McNamara, of Brockville, for Township of Roxborough.

Mr. J. McEachern, of Elmvale, for Township of St. Joseph.

Mr. F. H. McPherson, of Windsor, for Ridgetown Collegiate Institute.

The County of Simcoe was conducted by myself and Mr. J. McEachern, the County Auditor of Simcoe, and the County of Frontenac inquiry was initiated by me and conducted by Mr. David Murray of Kingston, who made a thorough investigation all his work having been checked by me and found correct.

A great deal of my time has been taken up in the preparation of the municipal cash books, the contract for which was awarded to Brown Brothers, Limited, Toronto, the lowest tenderers, at the low price of $3.40 for one quality and $2.90 for another. These books are intended for the use of villages, towns, townships counties, and cities under 15,000 in population, and their use is compulsory. The main features studied have been correctness and simplicity. The bank account is fully displayed and there is a column for each important class of receipts and disbursements. On the first of every month the balance should be struck and carried forward to the next, and if a monthly abstract is insisted upon by the municipality, as should be done in every case, a fraudulent entry should be detected at once. These books have received the approval of your Government and have also been endorsed by practical accountants as being a decided step in advance in municipal government. They have been copyrighted at Ottawa along with a form of school accounts which will come into use hereafter

There is a want of some other subsidiary books in most of the municipalities, but it was considered undesirable to attempt their introduction until the

Treasurers were thoroughly conversant with the books now introduced and which are to be delivered before the end of the present month. In the event of any further legislation in the matter of municipal accounts, it would be in the public interest to have municipal auditors appointed in November or December, and also to give to all municipalities the same privilege as now possessed by cities and towns, that of appointing one skilled auditor see clause 268, Consolidated Municipal Act, Cap. 42. Auditors should also be compelled to have a stamp to be used when passing accounts, debentures, etc. In some late cases owing to the want of this precaution, the same debentures have been used twice by the defaulting Treasurer. If the Auditors were appointed in November or December they would be in a position to check the cash on the 1st of January. As matters now stand it is sometimes three or even six weeks before this is done, leaving the door open to much fraud in the past.

I am unable at present to state what the actual loss will be in the case of the Counties whose Treasurers defaulted, but under the most favorable circumstances it will, no doubt, be heavy. The total amount of defalcations discovered since 1st May last, if the Township of Osnabruck is included, will be over $100,000.

In view of the large sums of money which have been lost to the municipalities by the present lax system of keeping and auditing municipal accounts, it is not surprising that there should be a strong feeling in favor of a better system, and a general feeling of satisfaction that the Legislature has endeavoured to establish some method which would have a tendency to diminish, if not to eradicate, the evils caused by bad book-keeping on the one hand, and equally bad auditing on the other. I have found the great body of municipal councillors and officers distinctly in favor of improving the condition of the municipal accounts, and some municipalities are disposed to go considerably further than the Legislature has already gone, in order to obtain the desired accuracy in their financial affairs However, I have no doubt the new books will pave the way for great improvements in municipal book-keeping. As previously mentioned in this report, not a little remains to be done to perfect the system of municipal accounts, but a good start has been made and the remainder, I trust, will come in due time.

I am Sir,

Your obedient servant,

J. B. LAING,

Provincial Municipal Auditor.

(No. 44).

Return to an Order of the House of the thirty-first day of March, 1897, for a Return shewing the expenditure on Colonization Roads, Bridges and other Roads in the Province for the last five years, shewing in each case the Electoral District or Districts in which each of the said Colonization Roads, Bridges and other Roads was situated. Presented to the Legislature 30th December, 1897. Mr. *Little*. *Not Printed.*

ROYAL COMMISSION

ON

FORESTRY IN ONTARIO

PRELIMINARY REPORT.

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO.

TORONTO:
WARWICK BRO'S & RUTTER, PRINTERS, 68 AND 70 FRONT STREET WEST.
1898.

INSTRUCTIONS TO THE COMMISSION.

"To investigate and report on the subject of restoring and preserving the growth of white pine and other timber trees upon lands in the Province which are not adapted for agricultural purposes or for settlement."

ROYAL COMMISSION

ON

FORESTRY IN ONTARIO.

PRELIMINARY REPORT.

TORONTO, Dec. 10th, 1897.

To His Honor
the Lieutenant-Governor of the Province of Ontario:

SIR,—The Royal Commission appointed in June last for the purpose of investigating and reporting on the subject of "restoring and preserving the growth of white pine upon lands in the Province which are not adapted for agricultural purposes or for settlement," held its first meeting in the Parliament Buildings on July 7th. All the members of the Commission were present, namely: Messrs. E. W. Rathbun, President of the Rathbun Company, Deseronto, Lumberman; John Bertram, President of the Collins' Inlet Lumber Company, Toronto, Lumberman; J. B. McWilliams, Peterborough, Superintendent of Forest Rangers; Alex. Kirkwood, Chief Clerk, Land Branch, Crown Lands Department and Thomas Southworth, Clerk of Forestry, Parliament Buildings.

Mr. Rathbun was elected chairman of the Commission, and Mr. Kirkwood vice-chairman, Mr. Southworth having previously been appointed secretary by Order in Council. The organization meeting of the Commission was attended by the Attorney-General and the Acting Commissioner of Crown Lands. The Attorney-General gave his views as to the scope of the enquiry to be undertaken, and defined the object of the Government in appointing the Commission to be the submission of a scheme for the reclamation of large areas of non-agricultural land, now unproductive, and such suggestions for the carrying on of future lumbering operations, as the information obtained by them would indicate to be desirable as a means of preventing similar land now wooded from becoming waste.

PERSONAL INVESTIGATIONS.

It was thought advisable that members of the Commission should personally visit and investigate as large an extent of the forest area of the Province as possible. During the summer and fall the members of the Commission visited the Townships of Smith, Harvey, Galway and Burleigh in the County of Peterborough, the territory along the north shore of Lake Nipissing and down the Vermilion River in the Township of Louise, the country around Thessalon, Algoma Mills and Killarney, the Townships of Carlyle and Humboldt and other points on the north shore of the Georgian Bay and in the neighborhood of Sault Ste Marie.

Your Commissioners also inpected some of the territory on the north shore of Lake Superior and the country along the line of the Port Arthur and Duluth railway west of Port Arthur in addition to taking a somewhat extensive trip through the Rainy River country, visiting also portions of the northern parts of Minnesota and Michigan in the United States.

As your Commissioners were anxious, as speedily as possible, to acquire some general knowledge of the conditions existing in different parts of the Province they did not make that minute examination into the sylvicultural conditions and habits and rate of growth in the particular localities that will be necessary before submitting detailed plans for the care and management of the respective areas visited and which may hereafter be put under systematic treatment. Their investigations, however, were of a sufficiently technical nature to warrant them in coming to the conclusion, that with sufficient areas set aside for the purpose and with reasonable care and protection of the young and growing timber now upon them the supply of merchantable timber in the Province of Ontario will be vastly augmented. In most of the places visited a forest growth was found in all stages of development, with the exception of some territory in the neighborhood of Port Arthur where conditions seemed to be somewhat different from those observed in other localities. Wherever the original growth was pine or pine mixed with other trees the natural tendency is towards the reproduction of the same species. Unfortunately, however, this reproductive faculty in many instances has not been allowed free play. The former apparently limitless forest wealth of Ontario has led to careless and somewhat extravagant methods on the part of our lumbermen; a belief that so far as the timber supply of the future was concerned it made no practical difference how our forests were exploited owing to their immense extent, has resulted in wasteful and incautious practices. Large quantities of waste material and litter consisting of the tops and branches of trees were left lying on the ground to feed the destructive fires that almost invariably followed and which, until a comparatively recent period, no effort was made to check. The

action of these fires in sweeping away the trees left by the lumbermen had the effect of retarding the reproduction of the original forest growth, and sometimes resulted in a crop of other varieties that for various reasons were more readily propagated. It is found, however, to be the case that where any of the original trees survived the fire and produced seeds the forest has eventually, though perhaps slowly, assumed the characteristics of the growth indigenous to the locality.

An Exploded Theory.

The widely entertained theory that the white pine on being cut away is invariably and permanently succeeded by a crop of inferior varieties, was completely disproved by the frequent instances observed in which tracts of flourishing young pine trees are growing upon cut-over land, and the prevalence of the idea can only be accounted for on the ground that fire has in so many cases completely exterminated the pine in all stages of growth. In most of the burned-over territory examined, pine was found intermixed with other trees, and gradually—as was no doubt the case with the original forest—asserting its supremacy and dominating the surrounding trees of the young generation.

There is every reason to believe that with the exclusion of fire, and the adoption of more intelligent and provident methods of lumbering, having regard to the abundance of seed at the time of cutting, there would be no difficulty in securing a quick and sure reproduction of the variety of trees desired. As previously stated, these conditions have not hitherto prevailed. In most of the territory inspected, forest fires, sweeping over the country after the lumbermen had removed the more valuable pine trees, have destroyed what was left. Sometimes the fire was not so severe as to destroy all the dormant seeds that may have been on the ground, protected by the leaves and forest debris, awaiting favorable conditions to germinate, but in many cases these were destroyed and few if any of the parent trees left to provide seeds for a future crop. In the case of such trees as the pines, this latter circumstance was an effectual bar to the speedy reproduction of the trees. Although the seeds of the pines are winged, they will not, in falling from the cones, scatter very great distances from the trees, and where only a very few parent trees remain, more time is required to seed a given area than if the seed trees stood more thickly and shed a more profuse and better distributed yield of seed. The question of how far the seeds of the white pine may be conveyed from the parent tree in falling is a point still being investigated by the Commission. In the meantime the seeds of the aspen poplar, the birches and cottonwoods, which from their downy appendages are capable of being carried great distances by the wind, soon cover the burned-over area, and a vigorous crop of these varieties springs

up and speedily occupies the ground. In most cases, however, a few pines have managed to survive the fire and where this is the case, their seeds are scattered among the young poplars and take root and grow in their shade. If a forest fire has completely bared the ground, the presence of the young broad-leaved trees is essential for the successful growth of a pine forest. The young pine plants, particularly Pinus Strobus or white pine, are extremely sensitive to strong sunlight and if exposed to the sun are almost certain to be killed in the first ten days of their growth. Hence the cover afforded by the poplar affords the shade conditions needed by the young pines. If there were no fire, however, the cover afforded by the trees left by the lumbermen would doubtless provide the shade required for the successful propogation of the pines, but after the forest fire the quick growth poplar is a favorable condition for re-stocking the burned area with the original and most valuable trees.

In looking casually at a young forest on one of these devastated tracts the first impression conveyed is that poplar and other deciduous trees form the sole vegetation, but a closer inspection will reveal the presence of a large stock of young conifers growing in the shade of the poplars. The young pines shoot up straight and slim reaching for the source of the light that filters through the leaves of the poplar. In the course of time the pines, which develop slowly at first, overtake and out-grow their competitors. The growth of the pine during the first two or three years is slow, but after that time the rate of growth increases in a very marked degree. In such a forest of about twenty or twenty-five years standing the pines will be observed here and there protruding their crowns above the leaf canopy. The poplars being gradually crowded out by the sturdier evergreens, die and decay, adding to the soil nutriment of the now dominant pines. The dense shade furnished by the poplars has in the meantime killed the lower branches of the pines, which consequently rise straight and free of limbs to the height of the crowns of the deciduous trees. The next and final stage reveals the forest as it originally stood, displaying a mixed growth with the tops of the giant pines visible from a distance, reaching above the general level of the leaf canopy of the forest.

A Typical Case.

The Township of Burleigh in the County of Peterborough, comprising an area of 124 square miles, may be considered a typical subdivision of what was at one time an extensive lumbering district. The cutting of square timber and saw logs in the township began about fifty years ago. The original forest was principally pine of excellent quality mixed with hardwoods. A colonization road opened the way for settlement about thirty-three years ago, but owing to the out crop of rock settlers are confined to small districts; lumbering operations con-

tinued active for forty years and even yet there is a small quantity of merchantable pine standing. The usual result followed where mixed operations of settlement and lumbering were carried on together, nearly the whole country was ravaged from time to time by forest fires.

As showing what the actual conditions may be in a cut-over and burned-over area the portion of the township around Burleigh Post Office, on the west side of Eel's Creek, where the creek runs alongside the colonization road, was selected for investigation. There are but few settlers in this part of the township; the soil is rocky and unfit for settlement except in patches, and is not far from the contact between the granite and the limestone. On the west side of the creek the country is a veritable wilderness; it has been burned over repeatedly, the last fire occurring in 1896 and, judging from the size of the charred remains of the young growth, another fire had swept over it about three years before that time. The frequent fires have burned a large part of the soil and killed any pines that may have been left by the lumbermen so that any natural reforestation would here be a very slow process.

The east side of the creek presents altogether a different aspect. Viewed from the Burleigh road it has the appearance of a thrifty young poplar forest with a few young pine trees appearing on a level with the poplar. On closer examination it was found that the young forest was largely composed of white and red pine, poplar, white birch, balsam, and spruce with cedar, black ash and spruce in the low lands, as well as odd pine trees standing here and there that had been left by the lumbermen, relics of the original forest that had survived the fires. From information given by the postmaster who was formerly a lumber foreman, and is an old resident of the district, your Commissioners were able to fix the exact date of the last fire that swept over this territory. It occurred twenty-three years ago.

The trees were of various ages and showed different degrees of growth according to situation. A fair average of the older poplars would be $5\frac{3}{4}$ inches in diameter at two feet from the ground, with twenty annual rings of growth at this point, making the tree, say twenty-two years old. As a rule the poplar was taller and with smaller diameter than the pine. The white and red pine stood thick on the ground, of various ages, vigorous and healthy, and will in a short time, if protected from fire, overtop the poplars and assert the supremacy of the species as some few of the trees have already done. The older white pines average six inches in diameter two feet from the ground, with nineteen annual rings of growth, showing them to be about the same age as the poplars. Red pine was the same age, but the average diameter of the trees examined was half an inch less than the white pine. The average height of the pines was about twenty-six feet and showed by the branches a varying height growth of one to two feet yearly. Black ash in the swamps average five inches diameter in twenty-two

years, cedar 3¾ inches in twenty-six years, and spruce, in these swamps which have not been burned at the last fire, standing amidst a very thick growth, averaged only four inches.

The conclusion arrived at was that within thirty-five years lumbering operations in this locality could be profitably resumed, the larger pine trees taken out, producing timber of merchantable quality and giving the younger trees a better chance to grow. Reasonably good forest conditions could, under proper regulations for cutting be induced, and a continuous supply kept up. The one great requisite for preserving this valuable asset to the Province is the absolute prevention of fire.

The Fire Loss.

The foregoing statement as to the condition in the township of Burleigh may be taken as fairly typical of the course of natural forest regeneration in nearly all the fire-swept lands which came under examination—the only exception being where forest-fires have been too frequent to allow the young vegetation to make headway. Throughout many of these tracts, popularly supposed to be of no value, the second growth is springing up in profusion, and though the trees may be of little present value—their prospective value is very great though difficult to estimate, as the time when these forests will be available depends very much on the question of adequate fire protection. Any estimate of their existing value must necessarily be on the basis of what they will be worth at such time as the timber becomes marketable to good advantage. On this point Dr. Rothrock, Commissioner of Forestry for Pennsylvania, says in a report on Forest Fires in 1896.

"For example, it is fairly within bounds to assert that if all the unproductive lands now vacant and uncared for which exist within the limits of the State, were protected from forest fires, for say forty years, the timber then growing would be worth not less than one billion, two hundred millions of dollars ($1,200,000,000) It is quite certain that if this growth were destroyed by fire, when but a year old, the loss to the commonwealth directly would be absolutely unimportant The same might be said if we were to see it destroyed at two, three, four or even five years of age. But when we remember that in burning these seedlings which are but a year old, we destroy a crop which in point of time is one-fortieth of its way to a money value of $1,200,000,000, the damages are consequential or indirect in character, and if expressed in figures must equal not less than thirty millions of dollars as the loss to the commonwealth."

If these figures be correct for Pennsylvania, and they are not disputed, how much greater would be the loss to Ontario by the destruction of a much larger area of second growth forest? As in the case of the Burleigh township woodlands, many of these young forests will be sufficiently far advanced to be cut

long before forty years. These considerations inevitably lead to the conclusion that the main factor in re-clothing the burned over lands is the question of fire protection. While there have been even within recent years extensive and devasting fires destroying large amounts of timber, the saving to the Province effected by the system of fire-ranging adopted in 1886 has nevertheless been very great. During the course of their investigations your commissioners had brought to their notice a great many instances in which incipient fires, that unchecked would have been disastrous in their consequences, were successfully fought and suppressed by the rangers. Wherever the system has been employed by the various limit-holders the results have been very marked. It is to be noted however, that as the employment of fire-rangers is optional with limit-holders some of them have failed to take advantage of the system, at the risk not only of their own limits but of those of their neighbors in addition.

The North Country.

During the summer your commissioners made a short trip north of the height of land on the head waters of the Missanabie river, flowing into Hudson's bay They found that the Indians in this territory are to some extent careless in regard to fires—with the result that considerable territory along the borders of the streams has been from time to time burned over. This is due largely to want of knowledge on their part that the immense forests of that country have any particular value. The commission was advised by a gentleman of the Hudson's Bay Company that if the matter were brought to the attention of the Indians, many of whom are able to read in their own language, a great improvement in this respect might be effected. The Hudson's bay officials expressed a willingness to co-operate with the government in any effort that might be made to educate the Indians to the importance of looking after their camp-fires and extinguishing any incipient fires that might be started.

Exempt from Settlement.

It is found that in most cases burned over areas growing up to small timber are on lands not suited for agricultural settlement, and in order that the government should reap the full benefit of the annual increment by the protection o these lands, they should be exempt from the possibility of settlers squatting on them, ostensibly to cultivate them, but really to secure and dispose of the growing timber.

The Loss from Cutting Small Trees.

Though possibly it may be regarded as somewhat beyond the scope of the enquiry specifically assigned to them, your Commissioners desire to draw the attention of the Government to the great loss of revenue and the detriment to the standing forests, occasioned by the practice pursued by some lumbermen of

taking out trees in the beginning of the most profitable period of their growth Whereas at an earlier stage of the lumbering industry few trees of smaller diameter at the butt than fourteen inches were taken out, it is now not unusual to see some drives largely made up of mere poles—sticks as low in diameter as six inches. No doubt this improvident method of lumbering is to some extent due to the belief that these young trees, if left standing, would probably be burned, and to the expectation that the land might be needed for settlement. It must be admitted that under former conditions the fear of fire was to some extent justified, but since the danger has been so greatly minimized the conditions are altogether different. The very small revenue derived by the Province from these half-grown trees renders it desirable that this practice should not be followed unless under very exceptional circumstances, indeed.

Average Rate of Growth.

Your Commissioners, after close investigation conducted under varying circumstances and covering a wide area, with different conditions of soil and density of growth, endeavored to arrive at an average rate of growth and consequent commercial value of young white pine from the period at which a tree would make an eight (8) inch butt log sixteen feet long to the time when it would produce a butt log fourteen inches in diameter and sixteen feet long and submit the following conclusions, which are very conservative :—

A young tree which would cut only one log eight inches in diameter and sixteen feet long, measuring sixteen feet board measure, would, if allowed to stand for thirty years, grow in diameter at the rate of one inch in five years—in some cases growth is as rapid as an inch in two years—and hence would give a butt log of fourteen inches diameter sixteen feet long, or 100 feet of lumber, board measure. In addition to this, however, this tree would have grown in height sufficient to give two more logs one say of eleven inches and one of eight inches diameter, both sixteen feet long, measuring respectively forty-nine feet and sixteen feet b. m. Thus a tree that requires, perhaps, forty years to make its first sixteen feet of merchantable timber would in thirty years more have increased to 164 feet. This may be considered the period of greatest relative growth; after attaining a diameter sufficient to made a fourteen in. butt log, your Commissioners estimate that the tree would continue to gain at the rate of $3\frac{1}{2}$ per cent. per annum. This bare statement of the case shows the necessity of protecting the young growth of pine in the interests of the Province. The advantage to the lumberman in holding his trees till they have reached the larger diameter is still more marked because of the greater price per 1,000 feet commanded by lumber cut from the larger logs.

But this is not all—pine trees do not begin to bear fertile seed in profusion until they reach nearly the age required to produce a diameter of six inches, and the process of forest reproduction is likely to be retarded by the removal of the seedling trees.

Market for By-Products.

As previously intimated, your Commissioners, in consequence of the comparatively limited amount of attention they have been able to devote to the matter, do not feel themselves justified in making a final report, especially as the important lumbering region of the Ottawa Valley has not yet been inspected by them. They are desirous, moreover, before concluding their labors, of making a full investigation into one phase of the question which has hitherto been but slightly considered, viz., the possibility of securing a remunerative market for the waste and refuse of lumbering operations as well as for those of our forest trees not now commercially valuable. In economic forestry practice it often happens that the development of a young forest can be greatly enhanced by the thinning out of the trees where they stand too thick, and the cutting down of less valuable varieties. At present the difficulty of disposing of these thinnings to any advantage makes this practice impracticable in Canada. Could such a market be found it would be a decided advance towards the adoption of more economical and less dangerous methods of lumbering, and would of itself do much to decrease the extent and frequency of forest fires. From enquiries thus far made, our Commissioners are inclined to believe that much of this apparently useless forest material, particularly in the old lumbered-over districts can be utilized in the manufacture of pulp and small wood goods, or for the production of charcoal for smelting ores, etc. Further investigation will, no doubt, assist in coming to a more definite conclusion on this most important part of the subject.

A prolific source of forest fires in some parts of the Province is the carelessness of many mining prospectors in the matter of their camp fires. Some plan of lessening this danger by regulations that will make the prospector more responsible to the authorities would seem advisable and is under consideration.

Recommendations.

Thus while it is obvious that the work of the Commission is far from complete, yet deeming that some phases of the situation require present action, your Commissioners make this brief preliminary report, and beg to recommend that :—

1. The present system of fire ranging inaugurated by the Government in 1886 be extended so as to be compulsory on all the holders of timber berths and that all unlicensed timber land contiguous thereto be also protected by rangers employed by the Government. That all fire rangers be subject to the inspection and control of the Department of Crown Lands.

2. That the officials of the Hudson's Bay Company be asked to co-operate with the Government in preparing and printing fire proclamations in the language of the Indians of the Northern Districts to be posted along the canoe routes throughout the territory.

3. That for all unworked limits on which the ground rent shall be two years in default on the termination of the present license year, the license shall not be renewed, but that the berths be held by the Crown as forest reserves.

4. That license-holders be not allowed to cut any trees for logs smaller than will measure twelve inches across the stump two feet from the ground unless under special forest conditions with the sanction and under the supervision of the district forest ranger.

5. That the Government take power by Order-in-Council to withdraw from sale or location and set aside to be kept in permanent Crown forest reserves, such areas of territory as are generally unsuitable for settlement and yet valuable for growing timber.

All of which is respectively submitted.

Commissioners { E. W. Rathbun, *Chairman.*
Alexander Kirkwood,
John Bertram,
J. B. McWilliams,
Thos. Southworth, *Secretary.*

(No. 46).

Return to an Address to His Honour the Lieutenant-Governor of the seventeenth day of December, 1897, praying that he will cause to be laid before the House a copy of the Petition presented to the Lieutenant-Governor in Council asking for an Audit of the Books, Vouchers, etc, of the Township of Manvers. A copy of the Commissioner's original report, together with his supplementary report. Also copies of all correspondence in connection with the matter. Presented to the Legislature 6th January, 1898. Mr. *Willoughby*. *Not Printed.*

(No. 47).

Return to an Order of the House of the thirteenth day of December, 1897, for a Return of copies of all correspondence, papers and documents between the Government, or any department thereof, and all parties who have made application for mining concessions of a similar nature to those now enjoyed by the Engledue Syndicate under agreement with the Government; or any other concessions not now provided for by or within the provisions of the present Mining Act. Presented to the Legislature 6th January, 1898. Mr. *St. John. Not Printed.*

(No. 48).

Return to an Order of the House of the twenty-second day of December, 1897, for a copy of the agreement entered in between the Commissioners of the Queen Victoria Niagara Falls Park and the Niagara Falls Electric Railways Company and the Canadian Niagara Power Company for the use of the surplus power of the said Railway Company in the generation of electricity. Presented to the Legislature 6th January, 1898. Mr. *German*. *Not Printed.*

ANNUAL REPORT

OF THE

SUPERINTENDENT OF SPRAYING

FOR

ONTARIO

1897

(PUBLISHED BY THE ONTARIO DEPARTMENT OF AGRICULTURE, TORONTO.)

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO.

TORONTO:

WARWICK BRO'S & RUTTER, PRINTERS AND BOOKBINDERS, 68 AND 70 FRONT ST. WEST.

1898.

REPORT

OF THE

SUPERINTENDENT OF EXPERIMENTAL SPRAYING.

Following the large crop of apples of 1896 that of 1897 was light. Insects injurious to fruit were very numerous and fungus was very prevalent. However, the result of the season's work was eminently satisfactory, as will be seen by the percentage of perfect fruit obtained. In calculating the percentage of perfect fruit obtained the following plan was adopted: A part of the tree was taken, and every apple carefully examined, and any specimen which had a worm or spot, no matter how small, was rejected. In some cases as high as 100 per cent. of clean fruit was obtained. These trees and their fruit were absolutely perfect.

The loss to the apple growers of Ontario this year through fungi and insects was enormous. First-class fruit brought as high as thirty-six shillings per barrel in the English market, and the demand was never better. But through the growers' neglect to take proper care of the crop very little of our fruit was fit for export.

The following instances will serve as examples of this loss: Mr. W. A. Warner, of Trenton, in whose orchard we sprayed twenty-five trees, says that the increased value of his crop on the trees was $150. Mr. J. P. Thorn, of Picton, in whose orchard we sprayed twenty-five trees, says the work was worth $75 to him, and that while his best upsprayed Spys were worth $2 per barrel, he was getting $3.50 per barrel for Spys which had been sprayed. Similar cases could be cited from many points, but these are enough to show the immense loss annually suffered. I believe the increased market value of the fruit harvested from trees sprayed by us this season would go far toward paying the cost of the work, although the crop was light in many places.

As suggested in last year's report, spraying was done this season at two points on the same trees which were sprayed by us last year. Stoney Creek and St. Catharines were the points selected, and the results were highly satisfactory. Numerous requests were received to have the work done at points we were unable to serve, in one case the Town Clerk writing that he was instructed to inquire upon what terms the spraying could be secured for that locality. Many of the gentlemen in whose orchards we sprayed report that they succeeded in carrying off a large number of prizes at the fall fairs with the sprayed fruit.

The attendance to witness the spraying operations reached almost the 3,000 mark. In one case a man came forty-three miles to see the work done and obtain information. Thirty thousand copies of a sixteen-page bulletin, entitled "Instructions in Spraying," and containing also a short paragraph on each of the more common insect enemies and fungi, with illustrations, were issued by the Department of Agriculture and distributed gratis. Many applications were made for these by mail. A great deal of interest was taken in the work, and the gentlemen in whose orchards we sprayed did all in their power to assist us.

The people are gradually waking to the fact that spraying is indispensable to the up-to-date orchardist, and every year the experimental, or more properly now the instructional, spraying of fruit trees is receiving more and more attention.

These experiments have demonstrated that spraying not only increases the percentage of clean fruit, but the specimens are larger, brighter, better flavored and possess superior keeping qualities, because the foliage is protected from injury by insects and fungi, and, being healthy, performs its important functions properly.

Spraying was conducted at twenty-nine points in twenty-three counties, covering the Province from Lake Huron to Lancaster.

This territory was divided into three routes, Mr. R. H. Dewar taking the western, Mr. J. H. McNeilly the central, and Mr. J. B. Pettit the eastern. They started on their trips on April 20th, 20th and 26th respectively.

The original plan was for six sprayings at each point.

This would have finished the work about July 3rd. However, about this time scab began to appear at many points and was gaining headway. Accordingly the men were sent out again on July 8th, and the work was finished by July 18th.

The scab appeared very late in the season this year, and many growers who sprayed early but neglected to treat the scab in July lost heavily.

Only one solution was used—Bordeaux mixture according to the following formula:

Copper sulphate	4 pounds.
Fresh lime	4 pounds.
Water	40 gallons.

To this was added in every case 4 ounces of Paris green.

On account of the law which forbids the spraying of fruit trees while in full bloom, and on account of rain, many applications were omitted and numbers of applications were discounted or lost by being closely preceded or followed by rain.

Curculio, bud-moth, leaf-crumpler, canker-worm, tent caterpillar, leaf roller, eye-spotted bud-moth and case-bearer, were found at work during the blooming period. However, we found no difficulty arising from the regulations, and observed the law to the letter and successfully dealt with these insects by spraying before and after blossoming.

The following plan of spraying was followed as closely as possible:

First spraying: When the buds are swelling.

Second spraying: Just before the blossoms open.

Third spraying: When the blossoms have fallen.

Sprayings at intervals of about twelve days until the danger of scab is past.

It is probable that three or four sprayings are all that would be required if the orchard could be watched and the application made just at the proper time. The cost of labor and material for an orchard is about two cents per tree per application.

One gentleman in whose orchard we sprayed with splendid success said that he had sprayed for four years with very unsatisfactory results. The trouble was that instead of breaking up the spray as should be done until it looks like vapor and settles like a fog on every part of the tree, he had made a coarse spray, with which it is impossible to touch every part of fruit and foliage.

In this way the scab had an excellent chance to spread, and much of the foliage was not poisonous to insects feeding upon it. When the coarse spray is used the work is only half done and there is a great waste of material. When the nozzle is working properly and the sun is shining a miniature rainbow will often be seen on the spray.

Spraying outfits were purchased from the Spramotor Co., of London, Ontario, and The Aylmer Iron Works Co., of Aylmer, Ont., and gave entire satisfaction.

W. M. ORR, Superintendent.

FRUITLAND, Ont., Jan. 6, 1898.

RECORD OF SPRAYINGS.

Clarkson, Peel County—Mr. C. G. Davis' Orchard.

1st application, April 26th.—Heavy rain in morning and showers during afternoon. Buds just bursting. Orchard in fine condition, well trimmed. Oyster-shell bark-louse very bad.

2nd application, May 7th.—Fine and cool. Leaves about the size of rose leaves. Aphis at work and tent-caterpillar plentiful.

3rd application, May 18th.—Fine and very warm. Tent-caterpillar and bud-moth working. Snows and Astrachans could not be sprayed as they were in full bloom.

4th application, June 1st.—Fine, and strong wind. Aphis and case-bearer on the trees. Could only spray Snows and Astrachans, as other varieties were in full bloom.

5th application, June 11th.—Fine and warm. Trees are looking very healthy. Bud-moth case-bearer and green apple-leaf tyre on unsprayed trees. Oyster-shell bark-louse is moving. Experimental trees free from caterpillars, but there are many of them on the other trees. Saw a little scab on sprayed Snow and Spy leaves.

6th application, June 24th.—Fine and very warm. The experimental trees are almost free from insect enemies, and foliage is excellent. Scab is showing a little, especially on Spys.

7th application, July 8th.—Fine and warm. Experimental trees in good condition, except a little scab appearing on Spys, Snows and Greenings.

I inspected Mr. Davis' orchard and found results to be as follows :

Snow.—Experimental spraying, 75 p. c. clean ; sprayed three times, 30 p .c. clean ; unsprayed, 5 p c. clean, and dropped most of the fruit.

Spy.—Experimental spraying, 60 p. c. clean ; unsprayed, 10 p. c. clean. The clean sprayed fruit was much larger than the clean unsprayed, and there was double the crop. The spotted apples from sprayed trees were also much better and larger than the spotted apples from unsprayed trees.

Red Astrachan.—Experimental spraying, 90 p. c. clean ; unsprayed dropped.

Greenings—Experimental spraying, 45 p. c. clean, about half a crop on the trees ; sprayed three times, very poor crop of inferior fruit ; four unsprayed ; trees in experimental plot will not give half a bushel of fruit.

Oshawa, Ontario Co.—Mr. R. J. Mackie's Orchard.

1st application, April 27th.—Clear and windy. Buds rather backward ; a few just bursting. Orchard under good cultivation, but needs trimming, and trees badly infected with oyster-shell bark-louse.

2nd application, May 8th.—Fine and cool. Leaves pushing out. Aphis at work.

3rd application, May 19th.—Cloudy with strong wind. Leaves nearly half grown and not in a healthy condition, owing to prevalence of bud-moth, aphis, case-bearer and tent caterpillar.

4th application, June 2nd.—Fine. Could not spray as trees were in full bloom. Insects attacking the foliage still bad. Found the green apple-leaf tyer. Good show of bloom.

5th application, June 12th.—Fine. Oyster-shell bark-louse moving. From 30 to 60 per cent. of bloom has set.

6th application, June 25th.—Fine, with heavy wind, which made it difficult to get mixture on well. Foliage on sprayed trees is quite clean, and free from insects, but other trees are being badly eaten. A little scab showing on sprayed Snows. On some orchards it is already very bad.

7th application, July 9th.—Fine. Some scab showing on experimental trees.

I visited this orchard on October 12th, and found the following results :

Yellow Bellefleur.—Sprayed, 95 p. c. clean ; unsprayed, no clean fruit.
Talman's Sweet.—Experimental spraying 80 p. c. clean ; unsprayed, 10 p. c. clean.
Stark.—Experimental spraying, 92 p. c. clean ; unsprayed, no clean fruit,
Greening—Experimental spraying, 84 p. c. clean ; unsprayed no clean fruit.
Rawle's Janet.—Experimental spraying, 100 p. c. clean.
Kings—Experimental spraying, 90 p. c. clean ; unsprayed, 10 p. c. clean.
Holland Pippins.—Experimental spraying, 85 p. c. clean ; unsprayed, no clean fruit.

Spy.—Experimental spraying, 85 p. c. clean; unsprayed, 2 p. c. clean. The culls from the sprayed Spy trees are better than the unsprayed fruit.

Snow.—Experimental spraying, 60 p. c. clean; unsprayed, no clean fruit. The 40 p. c. of defective fruit from the sprayed Snows is worth double the unsprayed Snows. Mr. Mackie says it would have been worth $200 to him if his orchard had been sprayed.

PORT HOPE, DURHAM CO.—MR. E. MITCHELL'S ORCHARD.

1st application, April 28th.—Clear and warm. Buds just opening. Found bud-moth and aphis. Oyster-shell bark-louse very bad. Orchard in very good condition, but needs trimming.

2nd application, May 10th.—Fine and very windy. Fruit buds plentiful and some showing color. Found a few tent caterpillars.

3rd application, May 20th.—On account of a heavy rain, spraying could not be done.

4th application June 3rd.—No work on account of rain. Some varieties are in full bloom.

5th application, June 14th.—Fine and warm. Oyster shell bark-louse moving to-day. Harvest and Snow apples have set fairly well, but Spys only about 15 per cent. Owing to an accident, part of mixture was upset, and the Snow tree was only partly sprayed.

6th application, June 20th.—Cool and cloudy. Sprayed trees free from insects. Considerable scab showing on several of the Spy trees. As flower cuttings had been planted in part of the orchard, the Snow apple tree could not be sprayed to-day.

7th application July 10th.—Fine and warm. Some scab showing, especially on Snow apples.

I visited Mr. Mitchell's orchard October 13th. Following are the results:

Spy.—Experimental spraying, 95 p. c. clean; unsprayed, no clean fruit.
Early Harvest.—Experimental spraying, 80 p. c. clean; unsprayed, 15 p. c. clean.
Snow.—In both experimental spraying and unsprayed, no clean fruit.
Baldwin.—Experimental spraying, had no bloom; unsprayed, 5 p. c. clean.

Mr. Mitchell has not a large orchard and the crop was not heavy, but he says it would have been worth $100 to $150 to him had he sprayed his orchard.

The failure to get results on the Snow apple tree will easily be understood by looking over the notes taken of the third, fourth, fifth and sixth application.

BRIGHTON, NORTHUMBERLAND CO.—MR. J. N. NISBETT'S ORCHARD.

1st application, April 29th.—Fine and warm. Buds just bursting. Some of the trees are already alive with tent caterpillars, and eggs are plentiful. Oyster-shell bark-louse very plentiful. Otherwise the orchard is in good condition and well cultivated.

2nd application, May 11th.—Fine and warm. Leaves about the size of a rose leaf. A good showing of fruit-buds. Aphis at work, and tent caterpillar very bad.

3rd application, May 21st.—Clear and cool. Greening, Snow and summer varieties in full bloom. Aphis, tent caterpillar, bud-moth and case-bearer still at work. I also found some canker-worms, which are the first found. Tent caterpillar reported very bad in this district.

4th application, June 4th.—Fine and high winds. Trees in full bloom and could not be sprayed. Foliage on sprayed trees looks much better than on unsprayed.

5th application, June 15th.—Fine and warm. Fruit has set about 50 p.c. Insects still numerous, found green apple-leaf-tyer and green apple worm. Oyster-shell bark-louse moving to-day. Foliage on experimental plot looks clean and healthy.

6th application, June 28th.—Fine and cool. A little scab appearing on the Spy leaves. Borers are bad in this orchard, and many limbs have been killed. Codling moth is bad.

7th application, July 12th.—Postponed at Mr. Nisbett's request; he will do the work.

I visited this orchard on October 13th, and found the fruit had been packed and shipped. I was informed that the results were satisfactory.

TRENTON, HASTINGS CO.—MR. W. A. WARNER'S ORCHARD.

1st application, April 30th.—Warm and windy with prospects of rain at night. Buds just bursting. Aphis very bad. Tent caterpillar at work. Orchard well trimmed, but trees too close.

2nd application, May 12th.—Cloudy with heavy showers in the evening. Blossoms showing color. Found a few case-bearers. Aphis, bud-moth and tent caterpillar very bad.

3rd application, May 22nd.—Fine and strong wind. Leaves about half grown and in good condition. Insects still bad on unsprayed trees. Could only spray Spy and Baldwin as other varieties were in full bloom.

4th application, June 5th.—Warm and cloudy. Bloom has fallen from all varieties. Insects still bad, especially on unsprayed trees.

5th application, June 16th.—Fine and warm. There is a noticeable difference between sprayed and unsprayed trees. Green apple-worm is doing a little damage.

6th application, June 29th. Could not spray on account of rain. Mr. Warner will spray when it clears. Green apple-worm is doing great damage in this orchard, and in the orchards in this locality, but could only find a few on sprayed trees Tent caterpillar is also bad around here, some orchards being defoliated. A little scab showing on Snow and Spy, but not bad.

7th application, July 13th.—Fine and warm. Some scab on sprayed trees, but very little, others quite bad.

I inspected Mr. Warner's orchard on October 14th, and found the following results :

Spy.—Experimental spraying, 76 p.c. clean ; unsprayed, 8 p.c. clean.
Snow.—Experimental spraying, 75 p.c. clean ; unsprayed, no clean fruit.
Wealthy.—Experimental spraying, 90 p.c. clean ; unsprayed, 20 p.c. clean.
Summer Pearmain.—Experimental spraying, 75 p.c. clean ; unsprayed, 5 p.c. clean.
Baldwin.—Experimental spraying, 90 p.c. clean ; unsprayed, 10 p.c, clean.
Bottle Greening.—Experimental spraying, 76 p.c. clean ; unsprayed, 5 p.c. clean.

The apple packers say this is the best fruit they have handled this year.

Mr. Warner says the increased value of crop on the 25 trees sprayed was $150.

Consecon, Prince Edward Co.—Mr. J. L. Adams' Orchard.

1st application, May 1st.—Cloudy and high wind, followed by heavy rain at night. Buds just bursting. Aphis very bad. Borers and oyster-shell bark-louse bad. Orchard in good cultivation but trees are rather close.

2nd application, May 13th.—Fine and warm. Aphis, tent caterpillar and case-bearer bad.

3rd application, May 25th.—Fine and warm. Foliage on sprayed trees looks much healthier than on unsprayed trees. Insects previously mentioned and bud-moth still working. Tent caterpillar reported very bad in this locality, and plenty of them in this orchard, on both sides of experimental rows, but not one to be found on sprayed trees.

4th application, June 7th.—Could not spray on account of rain.

5th application, June 17th.—Warm and cloudy. Blossoms have set only fairly well.

6th application, June 30th.—Fair and high wind. Foliage clean and healthy looking. Scab showing a little on sprayed Snows. Green apple-worm doing damage on unsprayed trees.

7th application, July 14th.—Fine and warm. A little scab on unsprayed Spy and Snow trees.

I visited Mr. J. L. Adam's orchard on October 15th, and found :

Spy.—Experimental spraying, 90 p.c. clean ; unsprayed, 40 p.c. clean.
Early Harvest.—Experimental spraying, 95 p.c. clean ; unsprayed, 5 p.c. clean.
Snow.—Experimental spraying, 90 p.c. clean ; unsprayed, 20 p.c. clean.
Baldwin.—Experimental spraying, 90 p.c. clean ; unsprayed, 40 p.c. clean.
Russett.—Experimental spraying, 90 p.c. clean ; unsprayed, 35 p.c. clean.

All of the sprayed fruit was larger than the unsprayed.

An apple buyer who visited the orchard one day while Mr. Adams was absent says he could easily pick out every tree which had been sprayed, from fruit and foliage.

Picton, Prince Edward Co.—Mr. Jas. P. Thorn's Orchard.

1st application, May 3rd.—Fine and warm, every appearance of rain toward night. Buds just bursting. Aphis and bud-moth at work. Orchard well trimmed and cultivated.

2nd application, May 14th.—Rained in the morning and could not spray. Mr. Thorn did the work when it cleared on the 18th. Found a few case-bearers.

3rd application, May 26th.—Fine and cool. Could only spray Spy trees as others were in full bloom. Foliage looking first-class. A few tent caterpillars at work in orchard.

4th application, June 8th.—Impossible to spray on account of rain. Prepared the mixture and Mr. Thorn promised to apply it when it cleared. For some reason the mixture was not applied as promised.

5th application, June 18th.—Fine and warm. Blossoms have set very well. Saw a very little scab on Snow and Spy leaves. Tent caterpillar still at work on unsprayed trees.

6th application, July 1st.—Fine and very warm. Foliage and fruit on whole orchard is good. The best orchard in the eastern division. Green apple-worm at work, also a few aphis.

7th application, July 15th.—Fine and warm. Sprayed fruit in splendid condition. Unsprayed spotting considerable.

I inspected this orchard in October, and had the pleasure of the company of John Caven, M.L.A., of Picton. I found results as follows:

Spy.—Experimental spraying, 90 p.c. clean; unsprayed, 10 p.c. clean.
Colvert.—Experimental spraying, 90 p.c. clean.
St. Lawrence.—Experimental spraying, 75 p.c. clean; unsprayed, 10 p.c. clean.
Snow.—Experimental spraying, 75 p.c. clean; unsprayed, 25 p.c. clean.
Golden Russet.—Experimental spraying, 90 p.c. clean; unsprayed, 25 p.c. clean.
Bellefleur.—Experimental spraying, 75 p.c. clean; unsprayed, 10 p.c. clean.
Swaar.—Experimental spraying, 75 p.c. clean; unsprayed, 10 p.c. clean.
Red Astrachan.—Experimental spraying, 80 p.c. clean; unsprayed, 15 p.c. clean.

Mr. Thorn says the spraying of the twenty-nine trees we experimented on was worth $75 to him. He further says that while unsprayed Spys were worth $2 per bbl. he was getting $3.50 per bbl. for sprayed fruit.

Prescott, Grenville Co.—Mr. Geo. Bowyer's Orchard.

1st application, May 4th.—Clear and cool. Buds just opening. Aphis and tent caterpillar at work. Oyster-shell bark-louse very bad. Orchard in poor condition and needs trimming.

2nd application, May 15th.—Fine and high wind. In addition to insects already mentioned case-bearer is at work. Tent caterpillar bad.

3rd application, May 27th.—Fine and cool. Trees in full bloom. Could not spray.

4th application, June 9th.—Could not work on account of rain. However Mr. Bowyer did the work of June 10th, which was a fine day. Bud-moth and green apple-leaf-tyer here. Trees looking very well.

5th application, June 19th.—Cool and high wind. Case-bearer very bad.

6th application, July 2nd.—Fine and warm. Foliage mostly clean and healthy looking. A little scab appearing on the Snow apple trees.

7th application, July 16th.—Fine and warm. Little scab on sprayed fruit, others bad.

I visited Mr. Bowyer's orchard in the fall and found:

Canada Red.—Experimental spraying, 60 p.c. clean; unsprayed, 16 p.c. clean.
Talman Sweet.—Experimental spraying, 80 p.c. clean; unsprayed, no clean fruit.
Snow.—Experimental spraying, 96 p.c. clean; unsprayed, no clean fruit.

A tree of snow apples sprayed on one side gave on the sprayed side 88 p.c. clean fruit, and on the unsprayed side not one clean specimen could be found. Mr. Bowyer says he has no good fruit this year except the sprayed fruit.

Lancaster, Glengarry Co.—Mr. Alex. Cameron's Orchard.

1st application, May 5th.—Fine and warm. Buds just opening. Aphis at work. Orchard in old sod, and does not receive much care apparently. Oyster-shell bark-louse very bad.

2nd application, May 17th.—Warm and bright. Aphis and case-bearer at work.

3rd application, May 28th.—Cool and cloudy. Could not work as trees were in bloom. Found a few bud-moth.

4th application, June 10th.—Raining ; cleared about one p.m. and spraying was done while trees were still wet.

5th application, June 21th.—Rain in forenoon and also part of afternoon. Sprayed when it cleared, but rain set in again about an hour after work was finished. Very few insect enemies.

6th application, July 8th.—Fine and very warm. Scab is showing a little on Snow apples. One of the spectators present to-day came forty-three miles to see the spraying.

7th application, July 17th.—Fine and very windy. Foliage splendid and fruit very clean.

I inspected this orchard October 19th and found :

St. Lawrence.—Experimental spraying, 90 p c. clean ; unsprayed, 10 p.c. clean.
Maiden's Blush.—Experimental spraying, 100 p.c. clean ; unsprayed, no clean fruit.
Snow.—Experimental spraying, 100 p.c. clean ; unsprayed, no clean fruit.
Alexander.—Experimental spraying, 100 p c. clean ; unsprayed, 10 p.c. clean.
Bolter.—Experimental spraying, 90 p c. clean ; unsprayed, 10 p.c. clean.
Hash.—Experimental spraying, 100 p.c. clean ; unsprayed, 20 p.c. clean.

Mr. Cameron is getting $4.00 per bbl. for sprayed Maiden's Blush and 75 cents per bbl. for unsprayed.

Stoney Creek, Wentworth Co.—Mr. Robt. Grainger's Orchard.

1st application, April 20th.—Fine and cool. Buds swelling on early varieties. Oyster-shell bark louse, canker worms eggs, and apple-leaf Bucculatrix in abundance.

2nd application, May 1st.—Could not work on account of rain.

3rd application, May 13th.—Fine and windy. Early harvest and Red Astrachan in bloom. A few tent caterpillars at work in this orchard.

4th application, May 26th.—Fine and warm. Spy, King and Greening in bloom. Aphis here.

5th application, June 7th.—Rainy. Prepared the mixture and Mr. Grainger promised to apply it when it clears.

6th application, June 33rd.—Fine and warm. Only 10 p.c. to 40 p.c. of a crop on the different varieties. Green apple worm has been doing some damage.

7th application, July 7th.—We sprayed these trees last year.

I inspected this orchard September 20th. Sprayed Snows were 80 p.c. clean. The bloom was light and the crop was small. Unsprayed Snows dropped most of their fruit, and not a clean specimen on the tree.

The result on Spys was also good. Mr. Granger says : "I have eight acres of orchard. There was not a large crop of apples around here this year. They sprayed twenty trees, and I had more apples off those twenty trees than off all the others put together."

Lynden, Wentworth Co.—Mr. Robt. Vansickle's Orchard.

1st application, April 21st.—Fine. Buds swelling on early varieties. An abundance of oyster-shell bark-louse and tent caterpillar eggs. Orchard in sod, appears healthy, but needs trimming.

2nd application, May 3rd.—Rained until 2.30 o'clock p.m., after which spraying was done. Aphis and tent caterpillar moving.

3rd application, May 14th.—Unsettled : shower while we were spraying and another shortly after work was finished. Early varieties in bloom. Tent caterpillar very bad.

4th application, May 25th.—Very fine. Spy in full bloom. Apple-leaf Bucculatrix and tent caterpillar very bad.

5th application, June 8th.—Fine and warm. Blossoms all off.

6th application, June 24th.—Fine and warm. The green apple worm doing some damage.

7th application, July 8th.—Fine and warm.

Apples set very poorly here, many varieties bearing no fruit. In varieties which did set, sprayed trees were better loaded and the fruit was larger :

Snow.—Experimental spraying, 90 p. c. clean ; unsprayed, no clean fruit.
Spy.—Experimental spraying, 20 p. c. clean ; unsprayed, no clean fruit.

BURFORD, BRANT CO.—MR. W. H. LEWIS' ORCHARD.

1st application, April 22nd.—Warm and windy: light showers while spraying. Buds just bursting on early varieties. Borers bad here, many large limbs killed.

2nd application, May 4th.—Fine and very windy. Tent caterpillar just hatching. Aphis at work. Oyster-shell bark-louse bad.

3rd application, May 15th.—Light showers while spraying. Early apples in full bloom.

4th application, May 28th.—Rained until 3:30 p.m. Spy and Greening in full bloom. This orchard has been sprayed once each year for two years, and twice this year.

5th application, June 9th.—Fine. Aphis still at work.

6th application, June 25th.—Fine and cool. Green apple worm has done some damage. It worked on both fruit and foliage, and sprayed and unsprayed trees.

7th application, July 9th.—Fine and warm.

I visited Mr. Lewis' Orchard on October 6th, and found results as follows:

Snow.—Experimental spraying, 90 p c. clean; unsprayed, 10 p. c. clean.

Baldwin—Experimental spraying, 95 p. c. clean; unsprayed, 5 p. c. clean.

Spy.—Experimental spraying, 85 p. c. clean, sprayed twice by Mr. Lewis, 36 p.c. clean; unsprayed, 6 p. c. clean, well loaded but smaller than sprayed fruit. Mr. Lewis sprayed just before blooming and just after the apple was formed.

TILSONBURG, ELGIN CO.—MR. JAS. HANEY'S ORCHARD.

1st application, April 23rd.—Warm, followed by rain in evening. Buds slightly swollen on early varieties. Oyster-shell bark-louse very bad.

2nd application, May 5th.—Very fine. Aphis and tent caterpillar at work.

3rd application, May 17th.—Fine and very windy. Blossoms open on early varieties. This orchard needs trimming and cultivating.

4th application, May 29th.—Could not spray on account of bloom. Tent caterpillar bad on unsprayed trees, but sprayed trees are free from them.

5th application, June 10th.—Fine. Tent caterpillar still very bad on unsprayed trees.

6th application, June 25th.—Fine and warm. Green apple worm at work. Foliage better on sprayed trees.

7th application, July 10th.—Fine and warm.

I visited the orchard on October 5th, and found results as follows:

Baldwin.—Experimental spraying, 90 p. c. clean; unsprayed, 10 p. c clean.

Spy.—Experimental spraying, 75 p. c. clean; unsprayed, heavily loaded, small and scabby, no clean fruit, only fit for cider.

Russet.—Experimental spraying, 50 p. c. clean; unsprayed, no clean fruit.

All varieties except Spy were a light crop. There are over 400 trees in this orchard. From the 20 sprayed trees 14 barrels were packed; from the 380 or more, only 5 barrels.

PORT DOVER, NORFOLK CO.—MR. GEORGE DIXON'S ORCHARD.

1st application, April 24th.—Fine and warm. The buds which are just opening are covered with Aphis. Found some oyster-shell bark-louse. The trees are old and very large.

2nd application, May 6th.—Fine. Tent caterpillar just hatching.

3rd application, May 18th.—Fine. Blossom open on early varieties.

4th application, May 31st.—Fine and cool. Could only spray five trees, as remainder were in bloom.

5th application, June 11th.—Very fine. Aphis still at work.

6th application, June 28th.—Fine and warm. Green apple worm at work. A great difference can be seen between sprayed and unsprayed trees, both in fruit and foliage. Fungus quite bad on unsprayed trees.

7th application, July 12th.—Fine and warm.

The following are the results in Mr. Dixon's orchard :

Baldwin.—Experimental spraying, 75 p. c. clean.

Red Astrachan.—Experimental spraying, 50 p. c. clean ; unsprayed, 1 p. c. clean.

Greening —Experimental spraying, 70 p. c. clean ; unsprayed, 1 p. c. clean, fairly well loaded with undersized fruit.

Talman Sweet.—Experimental spraying, 50 p. c. clean ; unsprayed, 12 p. c. clean.

Sweet Bough.—Experimental spraying, 50 p. c. clean ; unsprayed, 20 p. c. clean.

Phœnix —Experimental spraying, 70 p. c. clean ; unsprayed, no clean fruit.

Spy.—Experimental spraying, 70 p. c. clean. There were no unsprayed Spys in this orchard, but in neighboring orchards, only from 1 p. c. to 10 p.c. of the fruit was clean.

CALEDONIA, HALDIMAND CO.—MR. W. RICHARDSON'S ORCHARD

1st application, April 26th.—Clear and cool. A fine young orchard. Found aphis and oyster-shell bark-louse.

2nd application, May 7th.—Fine. Blossom just opening on some varieties. Foliage a good color and doing well.

3rd application, May 19th.—Fine and cool. Some varieties in bloom. Tent caterpillar bad on unsprayed trees.

4th application, June 1st.—Fine and cool. Some varieties in full bloom.

5th application, June 12th.—Fine. Caterpillar still on unsprayed trees.

6th application, June 29th.—Could not work on account of rain.

7th application, July 13th.—Fine and warm.

On inspecting this orchard I found the following results :

Spy.—Experimental spraying, 92 p. c. clean ; sprayed four times by Mr. R., 60 p. c. clean : sprayed three times by Mr. R., 30 p. c. clean ; unsprayed, 6 p. c. clean.

Baldwin.—Experimental spraying, 90 p. c. clean ; sprayed four times by Mr. R., 60 p. c. clean ; unsprayed, worthless.

Kings.—Experimental spraying, 95 p. c. clean ; unsprayed, 10 p. c. clean.

Early Harvest.—Experimental spraying, 60 p. c. clean ; unsprayed, worthless.

Spitzenberg.—Experimental spraying, 50 p. c. clean.

Snow —Experimental spraying, 70 p. c. clean ; unsprayed, no clean fruit.

Mr. King, an apple buyer of Toronto, says that the sprayed fruit in this orchard is the best he has seen this year.

DUNNVILLE, HALDIMAND CO.—MR JOHN TAYLOR'S ORCHARD.

1st application, April 27th.—Cool. Aphis already at work. Some oyster-shell bark-louse.

2nd application, May 8th.—Very fine. Foliage looks well. Leaves about one-fourth grown. Tent caterpillar at work to-day. Trees need trimming very badly.

3rd application, May 20th.—Could not spray on account of rain. However, Mr. Taylor promised to do the work when it clears. Some varieties in bloom.

4th application, June 2nd.—Fine and cool. Blossoms nearly all fallen.

5th application, June 13th.—Fine and warm.

6th application, June 30th.—Fine and warm. A few green apple worms here. Fungus appearing badly on some varieties. A great difference between sprayed and unsprayed fruit and foliage.

7th application, July 14th.—Fine and warm.

The crop here was very light, but the fruit was excellent on sprayed trees.

NIAGARA FALLS SOUTH, WELLAND COUNTY.—MR. THOMAS SMITH'S ORCHARD.

1st application, April 28th.—Fine and warm. Aphis feeding on the young buds, found some tent caterpillars' eggs.

2nd application, May 10th.—Rain in the morning, but fair in the afternoon. Leaves about half grown. Some oyster-shell bark-louse here.

3rd application, May 21st.—Fine and warm. Could not spray on account of bloom. Mr. Smith will spray as soon as it falls.

4th application, June 3rd.—Cool and rain while we were working.

5th application, June 14th.—Fine and warm.

6th application, July 1st.—Very warm. Fungus appearing on some trees.

7th application, July 15th.—Fine and warm. Foliage of sprayed trees looking fine.

I visited Mr. Smith's orchard on September 23rd, and found results as follows :

Roxbury Russet.—Experimental spraying, 75 p. c. clean and trees well loaded; unsprayed, fruit undersized and spotted, and fully 50 p. c. of crop dropped.

Alexander.—Experimental spraying, 90 p. c. clean, and good crop ; unsprayed, 25 p. c. clean ; fruit not so large and crop lighter.

Bottle Greening.—Experimental spraying, 60 p. c. clean ; unsprayed, no clean fruit, and dropped two-thirds of crop.

We sprayed twenty-two trees. There are 120 trees in the orchard. There will be five times as much clean fruit on the trees we sprayed as on the remainder of the orchard.

St. Catharines, Lincoln County.—Mr. A. Pay's Orchard.

1st application, April 29th.—Fine and warm. Aphis already on the buds.

2nd application, May 11th.—Fine. Found aphis and tent caterpillar.

3rd application, May 22nd.—Trees in full bloom. Mr. Pay will do the work when the blossoms fall.

4th application, June 4th.—Work could not be done to-day. Was done on 7th.

5th application, June 15th.—Fine and warm. Greenings dropping very badly.

6th application, July 2nd.—Very hot. A few green-apple worms here. Remainder of orchard has been sprayed twice. Fungus bad on Snows and Greenings. Same on others.

7th application, July 16th.—Fine and warm.

We sprayed these same trees in Mr. Pay's orchard last year with excellent results. On inspecting the orchard this year, we found the following results :

King.—Experimental spraying, somewhat spotted ; unsprayed, very badly spotted, and not half as much fruit as sprayed. The only *Baldwins* that fruited were sprayed trees, and the fruit was 80 p. c. clean.

Greening.—Experimental spraying, 80 p. c. clean, good crop ; unsprayed, dropped nearly all the fruit, and what is left is almost worthless.

Pomme Grise.—Experimental spraying, 90 p. c. clean, good crop ; unsprayed, dropped the crop except a few culls.

Snow.—Experimental spraying, 60 p. c. clean ; unsprayed, no clean fruit,—dropped.

Spy.—Experimental spraying, 90 p. c. clean, heavily loaded ; unsprayed, no clean fruit. Trees heavily loaded with undersized fruit.

Every tree except two Baldwins in last year's experimental plot is loaded.

Mr. Pay says that if all his orchard was as heavily loaded with as good fruit as are the trees which we have sprayed for two years ; it would be worth $2,000 to him this year, with apples at $2 per barrel.

Smithville, Lincoln Co.—Mr. George Adams' Orchard.

1st application, April 30th.—Light shower just as we finished work. Aphis and oyster-shell bark-louse bad.

2nd application, May 12th.—Rain in the morning, cleared about noon. Tent caterpillar bad. Leaves about half grown.

3rd application, May 25th.—Very fine. Could not spray as the trees were in bloom. Tent caterpillar very bad on all unsprayed trees. Only found two nests on the fourteen sprayed.

4th application, June 5th.—Fine and cool. Found one tent caterpillar's nest on sprayed trees. On forty unsprayed trees we cut 154 nests.

5th application, June 16th.—Fine. Some varieties dropping badly.

6th application, July 3rd.—Very warm. Fruit still dropping badly. Fungus quite plentiful on some varieties which are not sprayed.

7th application, July 17th.—Fine and warm.

In Mr. Adams' orchard results were as follows:

Swaar.—Experimental spraying, 80 p. c. clean and held its crop; unsprayed, dropped three-fourths of its crop and not a clean specimen to be found.

Roxbury Russet.—Experimental spraying, 90 p. c. clean and held its crop; unsprayed, dropped most of its crop and what remains is worthless.

Canada Red.—Experimental spraying, 90 p. c. clean; unsprayed, worthless.

Snow.—Experimental spraying, 80 p. c. clean.

Newtown Pippin.—Experimental spraying, 90 p. c. clean.

Spy.—Experimental spraying, 90 p. c. clean and well loaded; unsprayed, well loaded but under size, and not a clean specimen to be found.

There are ninety trees in this orchard; we sprayed fourteen. Apart from these, Mr. Adams says he did not have more than two barrels of clean fruit.

ST. THOMAS, ELGIN CO.—MR. E. LUTON'S ORCHARD.

1st application, April 20th.—Fine. Buds just pushing out. An old orchard.

2nd application, May 3rd.—Light rain all day and nearly all night. Found oyster-shell bark-louse, aphis, and tent caterpillar.

3rd application, May 14th.—Fine. Sprayed trees quite free from insects.

4th application, May 28th.—Rain to-day. Blossoms fully open.

5th application, June 10th.—Fine.

6th application, June 23rd—Fine. A marked difference in foliage on sprayed and unsprayed.

7th application, July 8th.—Fine and warm.

I inspected this orchard on October 5th, and found:

Spy.—Experimental spraying, 80 p. c. clean; unsprayed, well loaded but fruit smaller than on sprayed trees and only 5 p. c. clean.

Greening.—Experimental spraying, 50 p c. clean; unsprayed, dropped fruit and lost foliage badly.

Blenheim Pippin.—Experimental spraying, 85 p. c. clean; unsprayed, 25 p. c. clean.

Golden Russet.—Experimental spraying, 75 p. c. clean; unsprayed, dropped fruit and foliage is poor.

There are 93 trees in this orchard, and 90 p. c. of the clean fruit from them will be off the 20 trees sprayed by us.

BOTHWELL, KENT CO.—MR. A. C. SUSSEX'S ORCHARD.

1st application, April 21st.—Fine. Orchard in good condition. Buds starting.

2nd application, May 4th.—Fine. Found oyster-shell bark-louse, aphis, tent caterpillar and apple-leaf Bucculatrix.

3rd application, May 15th.—Trees all in bloom. Did not spray.

4th application, May 29th.—Blossoms not yet fallen. Mr. Sussex will spray when they fall.

5th application, June 11th.—Rain in the forenoon. Sprayed in the afternoon. Bud-moth doing damage on unsprayed trees.

6th application, June 24th.—Fine and warm. Scab quite bad on some of the unsprayed trees, and two of the sprayed trees slightly affected.

7th application, July 9th.—Fine and warm. Unsprayed fruit, especially Spys, are badly scabbed. Unsprayed Snows have dropped badly, and while foliage on unsprayed trees is yellow and falling, that on sprayed trees is a healthy dark green.

Inspected Mr. Sussex's orchard and found:

Spy.—Experimental spraying, 95 p. c. clean; unsprayed, dropped, and no clean fruit.

Snow.—Experimental spraying, 90 p, c. clean; unsprayed, no clean fruit.

Wealthy.—Experimental spraying, 95 p. c. clean; unsprayed, 25 p. c. clean.

Baldwin.—Experimental spraying, 85 p. c. clean; unsprayed, dropped crop.

Golden Russet.—Experimental spraying, 80 p. c. clean; unsprayed, dropped most of crop, no clean fruit.

Ben Davis.—Experimental spraying, 95 p. c. clean; unsprayed, 20 p. c. clean.

Most unsprayed trees dropped their crop before it was half grown and at this date (October 4th) have lost nearly all their foliage, while on sprayed trees the foliage is still in first-class condition.

WALLACEBURG, KENT CO.—CAPT. J. W. STEINHOFF'S ORCHARD.

1st application, April 22nd.—Fine and warm. Buds somewhat advanced. Trees badly infested with oyster-shell bark-louse and tent caterpillar. Needs pruning.

2nd application, May 5th.—Fine. A few aphis and apple-leaf Bucculatrix.

3rd application, May 17th.—Trees in full bloom, could not spray.

4th application, May 31st.—Fine. Blossoms fallen. Sprayed trees very free from insects.

5th application, June 12th.—Fine. Some varieties have set a full crop.

6th application, June 25th.—Fine. Fruit on unsprayed trees affected badly with fungus. Caterpillars of the Tussock-moth are plentiful here on unsprayed trees.

7th application, July 10th.—Fine and warm. Orchard looking well.

Inspected this orchard October 1st, and found the following results:

Baldwin.—Experimental spraying, 90 p. c. clean; unsprayed, 50 p. c. clean, fruit smaller and foliage gone.

Golden Russet.—Experimental spraying, 60 p. c. clean; unsprayed, well loaded but no clean fruit, foliage gone.

Snow.—Sprayed, 60 p. c. clean; unsprayed, fairly well loaded but no clean fruit.

Spy.—Sprayed, 75 p. c. clean; unsprayed, no clean fruit and foliage very poor.

SARNIA, LAMBTON CO.—MR. JEHU DAVIS' ORCHARD.

1st application, April 23rd.—Rain immediately after work was finished. Buds just bursting. Orchard in good condition.

2nd application, May 6th.—Fine, followed by rain. Oyster-shell bark-louse and aphis.

3rd application, May 18th.—Fine. Leaf-roller abundant. Some trees in bloom, not sprayed.

4th application, June 1st.—Fine. Bud-moth and leaf-folder at work. Insects are very bad at this point.

5th application, June 14th.—Fine and warm. Orchard is terribly infested with bud-moth.

6th application, June 26th.—Fine. Sprayed trees free from insects. Crop very light here.

Baldwin—Experimental spraying, 80 p. c. clean; unsprayed, no clean fruit.

Spy.—Unsprayed, no clean fruit; we did not spray any Spy.

Other varieties not bearing this year.

LUCAN, MIDDLESEX CO.—W. E. HOOPER'S ORCHARD.

1st application, April 24th.—Fine. Buds just swelling; oyster-shell bark-louse here.

2nd application, May 7th.—Fine. Aphis and apple leaf Bucculatrix in this orchard.

3rd application, May 19th.—Trees in full bloom; could not spray.

4th application, June 2nd.—Fine. Could only spray four trees as the remainder were in full bloom; found some tent caterpillar.

5th application, June 15th.—Rain in the morning; cleared in the afternoon.

6th application, June 28th.—Fine. Apples clean and foliage looking well.

I visited Mr. Hooper's orchard and found results as follows:

Spy—Experimental spraying, 90 p.c. clean.
Baldwin—Experimental spraying, 80 p.c. clean.
Sweet Bough—Experimental spraying, 90 p.c. clean.

This is only a garden and all the trees were sprayed.

KINCARDINE, BRUCE CO.—MR. NORMAN MCPHERSON'S ORCHARD

1st application, April 26th.—Fine and windy. Oyster-shell bark-louse and aphis on this orchard; large trees.

2nd application, May 8th.—Fine, followed by rain next day.
3rd application, May 20th.—Rained all day. Mr. McPherson will spray when it clears.
4th application, June 3rd.—Trees in full bloom except three Spys.
5th application, June 16th.—Fine. Could not spray Spys on account of bloom.
6th application, June 29th.—Rained until 4.30 : sprayed at 5.30. A little scab showing on Snows.
7th application, July 13th.—Rained until 5 o'clock, then cleared ; sprayed at 7 o'clock. Scab bad on unsprayed trees, and some on sprayed trees.

I visited this orchard and found :

Baldwin.—Sprayed 80 p.c. clean.
Spy.—Sprayed, 10 p c. clean ; unsprayed, no clean fruit.
Snow.—Sprayed, 75 p.c. clean fruit ; unsprayed, no clean fruit.

Sprayed Snows realized $4 per tree ; unsprayed Snows were hardly worth picking.

There were only two sprayings here which were not closely followed by rain.

Wingham, Huron Co.—Mr. G. Moffat's Orchard.

1st application, April 29th.—Fine day. Oyster-shell bark-louse bad here.
2nd application, May 10th.—Fine and warm. Aphis and tent caterpillar at work.
3rd application, May 21st.—Fine. Some varieties in full bloom.
4th application, June 4th.—Fine. Could only spray a few trees (rest were in bloom).
5th application, June 17th.—Fine. Aphis doing considerable damage in this locality.
6th application, June 30th.—Fine. Fruit and foliage on sprayed trees looking fine.
7th application, July 14th.—Fine. Scab very bad on unsprayed fruit.

I visited Mr. Moffat's orchard Sept. 29th, and found the following results :—

Blenheim Pippin.—Experimental spraying, 90 p.c. clean ; unsprayed, no clean fruit.
Greening.—Experimental spraying, 95 p.c. clean good crop ; unsprayed, 30 p.c. clean, but dropped most of crop.
Spy.—Experimental spraying, 85 p.c. clean ; unsprayed, no clean fruit, fruit small.
Duchess.—Experimental spraying, 100 p.c. clean ; unsprayed, 50 p.c. clean.
Maiden's Blush.—Experimental spraying, 95 p.c. clean ; unsprayed, 50 p.c. clean.
Talman Sweet.—Experimental spraying, 95 p.c. clean ; unsprayed 20 p.c. clean.
Snow.—Experimental spraying, 100 p.c. clean ; unsprayed 50 p.c. clean ; trees well loaded, but fruit almost worthless.
Colvert.—Experimental spraying, 90 p.c. clean ; unsprayed, 40 p.c. clean.

Arthur, Wellington Co.—Mr. Wm. Cahalan's Orchard.

1st application, April 28th.—Fine. Buds just bursting : oyster-shell bark-louse and aphis bad ; orchard needs pruning.
2nd application, May 11th.—Fine. Tent caterpillar at work to-day.
3rd application, May 22nd.—Fine. Blossoms showing color.
4th application, June 5th.—Could not spray as trees were in full bloom.
5th application, June 18th.—Fine. Fruit has set well.
6th application, July 1st.—Fine. Foliage good and fruit clean.
7th application, July 15th.—Fine. Sprayed fruit much larger and cleaner than unsprayed.

On examining Mr. Cahalan's orchard I found :

Snow.—Experimental spraying, 94 p.c. clean ; unsprayed, 10 p.c. clean.
Spy.—Experimental spraying, 95 p.c. clean : unsprayed, 16 p.c. clean.
Roxbury Russet.—Experimental spraying, 95 p.c. clean ; unsprayed, 45 p.c. clean.

Orangeville, Dufferin Co.—Mr. D. McPheeter's Orchard.

1st application, April 29th.—Appearance of rain. Old orchard, and badly in need of pruning : oyster-shell bark-louse here.
2nd application, May 12th.—Fine. Tent caterpillar at work.
3rd application, May 25th.—Fine. Sprayed trees free from insects.
4th application, June 7th.—Trees in full bloom, did not spray.
5th application, June 19th.—Fine. Most varieties have set well.
6th application, July 2nd.—Fine. Sprayed trees looking well.
7th application, July 16th.—Fine. Very little scab on fruit in this orchard.

I visited Mr. McPheeter's orchard and found results as follows :

Alexander.—Experimental spraying, 95 p.c. clean, and a full crop ; unsprayed, 75 p.c. clean, but dropped two-thirds of crop.

Talman Sweet.—Experimental spraying, 95 p.c. clean ; unsprayed, 80 p.c. clean ; sprayed trees have 50 p.c. heavier crop than unsprayed.

Spy.—Experimental spraying, 99 p.c. clean ; unsprayed, 90 p.c. clean, but not so large or bright as sprayed fruit.

Snow.—Experimental spraying, 98 p.c. clean ; unsprayed, 70 p.c. clean. The fruit on this orchard is the best unsprayed fruit I have seen.

MILTON, HALTON CO.—MR. ROBT. E. HARRISON'S ORCHARD.

1st application, April 30th.—Followed immediately by rain. Buds partly open ; oyster-shell bark-louse and tent caterpillar here.

2nd application, May 13th.—Fine. Tent caterpillar very bad.

3rd application, May 26th.—Could not spray as trees are in bloom. Aphis bad.

4th application, June 8th.—Fine. The tent caterpillar is a regular plague in this locality. In some orchards they are in millions and cover the trees, which they have completely stripped of foliage. None, however, are to be found on our sprayed trees.

5th application, July 21st.—Fine. This orchard is not well cared for, the trees are full of dead wood, and the sod has not been broken for forty years.

6th application, July 3rd.—Fine.

7th application, July 17th.—Looks like rain. Sprayed trees looking well.

I inspected this orchard Oct. 12th and found :

Spy.—Experimental spraying, 100 p.c. clean of spot, 90 p.c. clean of worms ; unsprayed, 50 p.c. clean.

Snow.—Experimental spraying, 100 p.c. clean.

Greening.—Experimental spraying, 90 p.c. clean ; unsprayed, dropped fruit.

A neighboring orchard of Spys which I visited, and which was not sprayed, had a heavy crop, but only 10 p.c. of clean fruit.

SPRAYING WITH ICE WATER.

Experiments were made in spraying fruit trees with ice water while in bloom, to ascertain the effect of cold rains on the fertilization of blossoms and the setting of fruit ; also to ascertain if heavy bloom could be partly sterilized in this way, thus saving the labor of thinning fruit.

The work was done by Mr. Jas. Tweddle at Fruitland, Ont., and was in connection with the experimental spraying of fruit trees carried on by the Department of Agriculture of Ontario.

Three trees of Longhurst peaches, three of Shipper's Pride plums, three of Keiffer pears, and one side of an Astrachan apple tree were selected for the work. The peach, plum and pear were in full bloom at the time of commencing work and the apple bloom was just opening.

For spraying, a barrel of water was cooled to the lowest temperature possible with broken ice. The tripple nozzle was used. One tree each of the peach, plum and pear were drenched for seven minutes, one of each for three and one half minutes, and one of each had one side drenched for seven minutes, the other half being unsprayed. One side of the apple tree was drenched for seven minutes. This work was performed on May 13th, 14th and 15th on all the trees, and on the 17th and 18th on all except the peach, from which the bloom was falling. On the 18th the plum and pear bloom began to drop. The weather was fine and warm, excepting a shower on the afternoon of the 15th. Results were carefully watched, and no difference could be noticed in the crop set on sprayed and unsprayed trees of the same variety, nearly 100 per cent of the blossoms setting in each case.

It would appear from the results of the above experiment that cold rains during the blooming period do not injure the blossoms unless they are so prolonged as to interfere with the fertilization of the blossoms.

(No. 50).

Copy of an Order in Council amending the regulations respecting the shooting and taking of wild duck and other water fowl in the waters within two miles of Rondeau Provincial Park in Rondeau Harbor. Presented to the Legislature 11th January, 1898. *Not printed.*

(No 51).

Copy of an Order in Council respecting the sale of watches, jewellery or other goods of a like kind in Algonquin National Park. Presented to the Legislature 11th January, 1898. *Not printed.*

NINETEENTH ANNUAL REPORT

OF THE

ONTARIO

AGRICULTURAL AND EXPERIMENTAL UNION

1897.

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1898.

NINETEENTH ANNUAL REPORT

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ONTARIO AGRICULTURAL AND EXPERIMENTAL UNION

1897.

To the Honorable the Minister of Agriculture:

I have the honor to present herewith the Nineteenth Annual Report of the Ontario Agricultural and Experimental Union.

Your obedient servant,

O. A. ZAVITZ,
Secretary.

Ontario Agricultural College,
Guelph, Dec. 31, 1897.

ONTARIO AGRICULTURAL AND EXPERIMENTAL UNION

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Auditors, - - - ALLEN SHANTZ and J. H. GRISDALE.

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ONTARIO AGRICULTURAL AND EXPERIMENTAL UNION.

ANNUAL MEETING.

The nineteenth annual meeting of the Ontario Agricultural and Experimental Union was opened in the Experimental building at the Agricultural College, Guelph, at 1.30 p m. December 9th, 1897.

As the President was absent on account of illness, and as the Vice-President was unavoidably kept away from the opening session, Mr. Robert Harcourt was appointed chairman for the first session.

REPORT OF THE SECRETARY.

By C. A. Zavitz, B.S.A., Agricultural College, Guelph.

The Board of Directors of the Experimental Union has held two meetings during the year—one at the close of the last annual meeting of the Union, and the other on June 30th, 1897. We have tried to arrange a programme to furnish a happy combination of pleasure and profit to those in attendance at this meeting. You will notice from the programme that addresses are to be delivered by Mr. Geo. McKerrow, Superintendent of Farmers' Institutes, Madison, Wisconsin, on "Economical Feeding"; by Dr. Jas. Mills, President Ontario Agricultural College, on "Some of the Advantages of the Ontario Fruit Experiment Stations to the Fruit Growers of Ontario"; by a number of the ex-students of the Ontario Agricultural College, on "Important Features in Connection with Successful Farming under Present Conditions," etc. I am pleased to inform you that Prof. Goldwin Smith is now here and will address you sometime during the afternoon. I think we have every reason to look forward to a good meeting.

You will remember that last year arrangements had been made for a systematic inspection of the different departments of the Institution for those present at the meeting. This seemed to meet with favor, and a somewhat similar arrangement was made for this year, in order that ex students and others visiting the Institution and attending the Union meetings might have a good opportunity to see the equipment of the different departments, to get acquainted with the different officers in charge, and also get some practical information along the different lines of work taken up in the various departments. The following programme was, therefore, arranged for the year which does not strictly belong to the Experimental Union proper.

Inspection of the Different Departments of the College.

Time.	Department.	Five-minute talk.	Person in charge.
8.30	Poultry	Crossbreeds of Poultry	L. G. Jarvis.
8.45	Dairy	Pasteurizing Milk	T. C. Rogers.
9.15	Experiment feeding	Meal rations for 'Steers	G. E. Day.
9.45	Farm proper.	Keeping Animals Healthy	Wm. Rennie.
10.15	Bacteriological	Contamination of Milk	F. C. Harrison.
10.30	Experimental	Good *versus* Poor Seed	C. A. Zavitz.
10.45	Horticultural	Grafting	H. L. Hutt.
11.00	Botanical	New and Troublesome Weeds	J. C. McDonald.
11.15	Chemical	Digestibility of Lucerne Hay	R. Harcourt.
11.30	Physical	Humus	J. B. Reynolds.

The past year has been a very good one for the Union work. Summary results of the year's co-operative experiments in horticulture, agriculture, apiculture, and dairying will be presented and discussed at the meeting. In agriculture alone co-operative

experiments were conducted on 2,835 different farms throughout Ontario in 1897. This included tests with leguminous crops; mixed grains for green fodder; grasses and clovers for hay; commercial fertilizers for corn and mangels; and with leading varieties of grain potatoes, roots, and fodder crops. From the horticultural section the results with the leading varieties of strawberries, raspberries, currants and gooseberries will be presented. The committee appointed to look after the dairy work will report on uniform tests made in several cheese factories and creameries during the past summer. The results of these experiments in the different branches of agriculture should prove both interesting and profitable to those in attendance at the meeting.

The report of the last annual meeting of the Experimental Union was published as an Appendix in the Report of the Agricultural College, and thus received a very wide circulation. Several articles on the work of the Union were written during the year, and furnished to the newspapers of the Province, and in this way the work of the Association has been kept before the people.

The membership of the Union has been considerably increased in the past year, and is now about 20 per cent. greater than last year, and about 50 per cent. greater than that of 1895. The members were never in a better position to do really valuable experimental work in Ontario than at the present time, and we look forward with bright hopes to have very successful work done in connection with our Association in the future.

REPORT OF COMMITTEE ON ECONOMIC BOTANY AND ENTOMOLOGY.

Wm. McCallum: By the illness of Prof. Panton early in the season, and by Mr. Paterson, his assistant, going to British Columbia, our plans seemed to be upset. As for myself I had no opportunity of doing anything in the work. I wish to make a certain recommendation, that is, that the work in botony and entomology be separate. I would recommend that a committee be appointed to outline certain definite work in Economic Botany which could be systematically taken up the coming year. In regard to our weeds, we want to get information regarding their life history, and the best methods of eradication. Our idea was to take one hundred or two hundred of the weeds of the Province and grow them on plots, experiment with them, and make a thorough and systematic examination of their life history, and their habits and methods of working. A summary could be made at the end of each year. In a couple of years a sufficient number of seeds could be obtained of the different weeds to send out in some way or other to the members of the Union. There is no use in confining the work to two or three weeds. It should be gone into systematically and thoroughly. I consider this line of work very important to the Association.

GOVERNMENT GRANT AND MEMBERSHIP FEE.

Mr. C. A. Zavitz: The committee appointed at the last annual meeting of the Union to interview the Minister of Agriculture regarding an increased grant and the membership fee, wish to report that they fulfilled their appointment. As I am the only member of the committee present at this meeting, I am glad there is a satisfactory report to present to you. Mr. Geo Harcourt and I waited upon the Minister of Agriculture and, after consultation, were successful in having the Government grant increased from $1,000 to $1,200. The Union, I am sure, feels very grateful for this increase, as we are thus enabled to both increase and improve our co-operative experimental work. We are also allowed to place the membership fee to the Union at fifty cents providing we get one hundred members. We already have considerably more than the required number of members. We trust the report of the committee will prove satisfactory to the meeting. The report was adopted.

EXPERIMENTS PROPOSED IN SOIL PHYSICS.

Mr. J. B. Reynolds: There is a matter in connection with my department in physics that I shall recommend to this Union. It is no report, only a recommendation of work to be carried on in future. It is to this effect: In these later years of our agricultural history of this Province, as forests are being taken from our land, as the country is becoming more or less stripped and bare, the question of moisture is becoming more and more interesting to our farmers. Streams, creeks, and even rivers and springs, are drying up. I remember quite well a little creek that used to run through our farm twenty years ago. It would run from early spring until late fall. There was no time when we did not have an abundant stream of clear water through the farm Now it dries up in June. All through this Province, more or less, our streams are drying up. Soil moisture is becoming seriously considered by farmers. What I want to propose is to have some young men who will undertake work or assist in this co-operative work. Samples of nine inches of the surface soil and of nine inches of the subsoil could be sent here to the department of physics at the College. These samples could be sent as required and the amount of moisture could then be determined. In that way we could compare certain things, such as the effect of shallow and deep cultivation, the effect of different crops, the effect of weather conditions, etc. I have done a little work in determining the soil moisture on one soil. I would recommend that a committee be appointed to get members to co-operate in this work. I shall undertake to send out tubes to cut down into the soil to get proper samples. Postage will be necessary. Small tubes will not cost very much. Some assistance might be required in laboratory when soils arrive. I am certain that something of much practical value along this important line could be arrived at. There is a little being done in the United States. I have noticed some of the determinations made in 1895 and 1896, but there was nothing previous to that of any consequence. The work is new. People are awakening to the necessity and the value of the work in the United States. I think that good and valuable results could be arrived at if we could obtain enough co-operative assistance. I would recommend that a committee be appointed to consider this.

Mr S. P. Brown: The objects of the Experimental Union are for bettering the agricultural condition of the farmers. Such an experiment as this recommended by Mr. Reynolds is one of the most important that could be undertaken, because we all know that the success of the farmer depends on the crops obtained from the soil, and the crops that are obtained depend largely on the moisture that may be retained in the soil during the dry season. It seems to me that anything that can be taken up to increase the fertility and to retain the moisture of the soil is something that would be very beneficial.

THE PRESIDENT'S ADDRESS.

By D. Z. Gibson, B. S. A., Willow Grove, Ont.

It is a pleasant duty for me to welcome you all to the nineteenth annual meeting of the Ontario Agricultural and Experimental Union. To the visitors we offer the right hand of friendship; to the ex-students we give brotherly greetings, hoping that those feelings peculiar to college life may be revived; while to the officers and students we extend the hand of fellowship, trusting that our visit here shall not interfere too much with your College duties.

This meeting convenes under especially favorable circumstances. Our labors have been rewarded with a bountiful harvest. Prices of many farm products are more buoyant than for some years, causing a greater feeling of confidence among the farmers, and also more activity in the business centres of the country.

Property in land stimulates the most stable kind of patriotism. In view of these facts, it is my earnest hope that we all, in this jubilee year, may see and feel that there is no better country under the shining sun in which to live than this Canada of ours.

Most of you, doubtless, are familiar with the development of this organization. While its growth has been amazing it has not been of the mushroom order. Its results are not the product of hasty calculation or experimentation. When we realize that, according to its dictation and direction, there were this year 2,835 farmers measuring off plots, driving stakes and watching with a critical eye the growth, characteristics and adaptation to local districts of the different varieties of cereals, grasses, clovers, root-crops, etc, under test, and also the action of artificial fertilizers, weighing them in the balance and aiding nature in bringing about the survival of the fittest; then and then only can one get an idea as to the worth of this Union to the Province. But, besides the experiments with farm crops and fertilizers, this association is doing good work on a more limited scale in horticulture, apiculture, economic botany and entomology, dairying and live stock.

The nature of the work involved in these experiments prevents their being as generally accepted by the farmers as some others, yet they are none the less important and might be safely extended; and it would seem, looking at the needs and importance of the live stock industry, that it especially is worthy of more attention than it has heretofore received.

This year about 2,000 of the 2,850 experimenters reported the results of their work. We must not conclude, however, that the material distributed to the others was wasted. Of course those who were successful reaped the most direct benefits, with which you are doubtless familiar; but there are other indirect benefits in which a very large percentage of the unsuccessful might participate as freely as the successful.

First: It encourages *thoroughness*, a quality that we as farmers must court.

Second: It sharpens our powers of *observation*. When watching the progress of the experiment we are lead to notice things that might otherwise escape our attention. Those two words, "*I noticed*," have been the germ of much of the invention and advancement of the world.

Third: We get a taste of the care, constant attention, and trouble that the carrying on of experiments involves, and as a consequence there is created within us a more sympathetic feeling towards experimental stations, and we also become less impatient for the findings of those stations.

Fourth: It gives us a sort of elementary schooling in the work of experimentation, which, it seems, the progressive farmer must undertake in some phase or other of farm work.

In view of the foregoing direct and indirect benefits, it would seem, then, that the more co-operative experimenters that could be secured throught the Province the better; while, on the other hand, it might be said that at present there are enough experiments, if well conducted, to corroborate the work done at the College, and also to decide as to the adaptation of certain varieties to localities; and therefore, instead of greatly increasing the number, rather to retain those on the mailing list who are members or who have been successful and have an interest in and an inclination for the work. However, these are points that may engage your attention in discussion.

As most of you are aware, the membership fee has been reduced from one dollar to fifty cents. This change will meet with favor from those wishing to join our Union, and should materially increase the number of members. The privileges that are accorded to members are by no means insignificant. When we recollect that we are privileged to take a trip at a reduced rate to our Alma Mater, renew College friendships, partake of the genial hospitality of the officers and students, get a summary of the past year's work in its different lines, and listen to some of the foremost agricultural spirits on the continent, surely, we ought not to hesitate before joining. Besides, the members occupy the first place on the mailing list. They are then almost certain to get the particular experiment they desire. This may, in the future, if the experimenters increase at the present rate, be a privilege not to be despised. Having in mind these considerations, every ex-student and student should become a part of an organized band of investigators whose object is to find *truth* in matters pertaining to present day agriculture.

Some of us may plead that we have not the time to spend upon the experiments. It is true, I believe, that the ex-students are busy men, and particularly at the time of year when the test requires attention; such being the case, however, should not altogether excuse us. Triumph and toil are twins. We should be willing to sacrifice a little, not only for ourselves, but also to further a work the beneficial results of which cannot be put down on paper.

We are not by any means an antiquated organization. We are up to date, inasmuch as we have in the *O. A. C. Review* an organ which assists in strengthening the bond of brotherhood among the students and ex-students. My predecessors have emphasized the importance of ex students taking this monthly. This is a valuable periodical, and could be made still more valuable if the alumni would turn over a new leaf and contribute more to its columns.

The financial position of the Union is of great importance to us. We have, thanks to the Minister of Agriculture, this year received $1,200—an increase of $200 over last year. If the Association is to extend or advance its work more funds are necessary. This year each experimenter cost the Government an average of less than 40 cents.

We believe, therefore, that this Union has learned the art of practising economy in the use of public funds; and we further believe, having in mind the cheapness, the importance, the fruitfulness and value of those tests to the Province generally, that it would be hard to make a better use of public money, and that we are justified in asking (in all courtesy) for the coming year a still larger grant.

In conclusion, allow me to thank you for electing me to this position, one of honor with little work. Our thanks are due Mr. Zavitz for the wisdom and zeal which he displays in carrying on this work; in fact, he is the pivot upon which swings the greater part of this Union.

I trust that in the coming year we shall make still greater advancement in agricultural pursuits, and that our attendance here shall enable us to get more of that commodity which pays the best of all, namely, new knowledge.

WELCOME TO STRANGERS.

Dr. Jas. Mills: We have been fortunate to secure a visit from Dr. Goldwin Smith on this occasion. We did not place Mr. Smith's name on the programme, because we were not certain of having him visit us. We hoped to have him visit us in the month of June or July when he could see the farm and experimental grounds, and all to good advantage, but we asked him to come to-day and give us a short address on this occasion. I may say to the farmers present, that we are always glad to see them at this annual meeting of the ex-students, students, and officers. This large attendance gives the members more interest in their work and shows sympathy with what they are doing. The object of the Union, naturally, is to keep up a fellowship between students and fellow students, encourage experimental work on different lines, especially field experiments in the work presided over and directed by Mr. C. A. Zavitz. We think Mr. Zavitz is doing good work. He is doing a very valuable work for the Province. We now have a fifty acre field containing over two thousand plots devoted to experimental work on different varieties of grain, dates of seeding, methods of cultivation, selection of seed, and many other things that farmers wish to know and cannot very well afford the time and money to do for themselves. Mr. Zavitz tests all the known or likely varieties of seeds for five or more years in succession, under various conditions of soil and seasons, in the plots in that field. When he finds out three or four of the best varieties then Mr. Rennie, farm superintendent, grows these in large quantities on the farm. Samples of the seeds are then distributed throughout the Province to experimenters, ex-students and students in connection with the Experimental Union. We think this is valuable work and, therefore, we are glad to welcome those that come here and discuss these matters at the Union meeting I say to the farmers who are present, you are very welcome indeed. We are pleased to see you in increasing numbers from year to year.

I may say that it is a decided pleasure to have so distinguished a man as Dr. Smith with us to-day. I wrote to him some time since to visit us He insisted that he had many engagements to fill, and felt the great responsibility of coming so far and delivering a formal address on anything, but finally he decided to come and address you. I am pleased because Dr. Smith is known to you all as one of the greatest thinkers of this continent, and undoubtedly one of the best writers of good English that this present century has produced, and he is a man of independent opinion. We ask him now to say a word to those present.

THE FUTURE OF AGRICULTURE.

By Prof. Goldwin Smith, Toronto.

The first thing that occurs to me is the expression of my gratitude for the treat, which, Mr. President, I have enjoyed under your kind auspices this morning. I have seen a great variety in all your departments of objects which must excite one's admiration and enlarge one's hopes for the agriculture of the future. What the agriculture of the futute will be one cannot say. I would like to look one hundred years hence and see what it will be then. I am afraid that one hundred years hence I shall not have the pleasure, but there are many here, who, if they fight the bacteria, will be successful in living one hundred years hence. (Applause.) A number of very gratifying things occur to me. Perhaps you are aware that we are going to have a magnificent fancy ball in Toronto, given by their Excellencies the Earl and Countess of Aberdeen. At that fancy ball there are to be quadrilles representiag Canadian life, one of which is to represent different lines of Canadian industry by emblematic costumes. I know a young lady in Toronto who has received an invitation, which she regards as a vice regal command, to appear as a Canadian cheese. I will now, after inspecting the appliances in your dairy department, be able to tell her that she has only to go into a very beautifully made machine and be rotated at the rate of 8,000 revolutions per minute, and that will separate the fatty part of her from the rest by centrifugal action, and she will meet in the highest degree Lady Aberdeen's requirements. (Laughter.)

I am not going to attempt to talk to you about farming, because I would expose my own ignorance in less than half a sentence. But I lived in the country in England, and never shall forget the charms of its farm life. There is nothing like this agricultural country in the world, combining, as it does, sylvan beauty with the finish caused by the outlay of money and labor of so many years. My memories of farm life are quite obsolete. When I carry my mind back to the farming of that time I see the reapers working in a row with their sickles, with the women following, and in the autumn time I hear the flail. We began with the manorial system but it was soon found out that paid labor was better than forced labor. Labor strikes of the present day are mere trifles as compared with the uprisings and riots of the serfs, until the labor system gradually settled down to its present position, in the division of the agricultural world between the landlord, the tenant farmer, and the laborer. When the landlord was kind this was not an unhappy state of things. Some of the great land owners were great improvers. In the last century Lord Townsend and Mr. Cook, of Norfolk, were great improvers of agriculture. This showed what a necessary part the holder played in agriculture. A small holder could not start such improvements. That is the cause, I believe, of China's stagnation. Mr. Gerald Wilson, in his book on China, said that not one man in ten thousand was wealthy. They were not able to start improvements We have not the great landowners here to start improvements and make experiments, but we have the Guelph Agricultural College to take the part of these. English agriculture and country life has come to another crisis. The value of wheat has declined, and I cannot imagine wheat to be ever again raised there in competion with Canada, the Argentine Republic, Russia, and Hindostan. In Hindostan the average wage paid to a man or woman is thirty-eight

shillings a year. What of the Hindo? He just wants a little rice to live on. How can English wheat compete against all this? The result will be a great change in English agriculture and life. The farmers must take to producing those things which they can sell in the great cities, and that will alter Canadian methods and their market. I think a change must take place. The land can no longer support the three classes, and one must go; it would probably be the land holder—the one that did not produce.

Some desired to cut up England into small holdings, and there was something very attractive in the small holding; but what was to be done with the great mansions and farm buildings of England. You will have to change the whole agricultural structure of the country. It would be an evil day for England in which the agricultural interest sank into a permanent depression; it was the foundation of a well balanced industry, for it was after all the farm and farmers on which national prosperity rested. I was just talking to Dr. Mills at lunch of what some people thought, and I am inclined to think the same, of the excessive resorting of young men to the universities and the professions that were supposed to be higher callings, although in the disposition of human lot no honest calling was high and none low. There is a certainty indeed that the professions are becoming overstocked, and no doubt that involved a social as well as an economic danger. What is to be done to obviate this? There is no one single cure, but I cannot help thinking, especially after what I have seen to day, that more scientific agriculture might form an equally congenial field for young men whose ambition now carried them to the university. The life of the agriculturist is not so dull even as that of the clerk in the store, a bank clerk, or a mechanic. He had a change in the seasons, and the pleasure of seeing and rejoicing in the work of his own hands, whereas the mechanic was merely a human handle or spindle. Therefore agriculture has changed in that respect, and has an advantage over ordinary callings; and if it became more scientific, I do not know why it should not be just as interesting to an intelligent man as law or medicine or any other profession. It would seem from what I have seen to day, that agriculture here is apt to undergo a change. With the improved machinery and better methods of agriculture, the larger farms were likely to take the place of the smaller farms. I went to the Northwest and expected to see a beginning of a great change in agriculture. I thought with the use of the best machines that the large farms would surely pay. I saw the Bell farm and also several other large farms. I presume the reason they do not pay is because they cannot afford to keep men, horses, etc. through the long winrer. I cannot help thinking with such machinery as I have seen here to-day, a great change in agriculture must take place in the organization of farming. At all events the ground which in the past had been scratched would be tilled, and the produce would be doubled Look at the English modes of agriculture and with comparatively unfertile soil naturally, it raises the greatest harvests in the world. Therefore it seems to me there is a great future to agriculture. I visited this college about twenty-five years ago. You were then young and struggling with difficulties. The use and prospect of this institution then did not seem anything like it does now. Now you are securely established in the confidence of the people of this country, and you are likely to return to the province ten fold or one hundred fold for the money spent. I heartily wish you and the president success, and congratulate you upon the state of the institution, and the high estimation in which it is held, and sincerely wish it will bear abundant fruit in the future. (Applause.)

CO-OPERATIVE EXPERIMENTS IN AGRICULTURE.

C. A. Zavitz, B.S.A., Agricultural College, Guelph, Director of Experiments

On behalf of the committee on agricultural experiments, I shall now present the report of the co operative experiments conducted in agriculture throughout Ontario during the year 1897. This is the eleventh time that I have been asked to perform this duty at the annual meeting of the Association. When we started the co-operative xperimental work in a vary small way in 1886, we had good hopes for its success. The

hearty support that we have received from the Government, from the College, from the ex students, and from the farmers generally, has enabled us to develop this work even beyond our first expectations. The value of these co-operative experiments in agriculture, as now conducted by the Union, is inestimable to those engaged in farm work throughout our Province Our system of co-operative experiments in agriculture is original in many respects. It is the most extensive and complete system of co-operative experimental work in agriculture than we know of at the present time. This feature may be more clearly brought out as we consider the kind comments by leaders in agricultural education and agricultural experimentation throughout America. Reference is made to a few of these comments, which are given in the last page of our programme, now in your hands. When in attendance at the annual meeting of the American Association of Agricultural Colleges and Experiment Stations, held at Minneapolis in July last, I found much interest manifested in our work. I was kept on the platform for fully one hour answering questions and explaining our system of co-operative experimental work, and those present at the meeting who were familiar with our work spoke very highly of what we are doing in the line of co-operative experiments.

Farm Crops in Ontario.

Crops.	Acres in Ontario, 1897.	Varieties tested at O. A. C. within ten years.	Varieties tested over Ontario, 1897.
Oats	2,432,491	202	5
Hay and clover	2,341,488	68	8
Winter wheat	950,222	141	7
Peas	896,735	95	4
Corn	544,035	219	6
Barley	451,515	94	4
Spring wheat	323,305	134	4
Rye	187,785	8	1
Potatoes	169,333	215	6
Buckwheat	151,669	5	3
Turnips	149,336	178	4
Beans	50,591	40	3
Mangel-wurzels	41,175	96	5
Carrots	12,025	56	5

You will notice that about two and a half millions of acres were devoted to the cultivation of oats in Ontario in 1897. There were, therefore, more acres devoted to the oat crop than to any other. Clovers and grasses occupied nearly as much land as was given to the oats; and mangel-wurzels and carrots were grown the least extensive of any general farm crop in Ontario. These large areas, devoted to our agricultural crops throughout Ontario, show the great importance of growing nothing but those crops that will produce large yields of a good quality. We have, therefore, obtained a great many different varieties of crops imported from different countries throughout the world, and have tested them in our own experimental grounds at Guelph in order to find out which varieties would prove the most serviceable for general cultivation for the farmers in this Province. You will see the number of varieties of each crop which we have tested by looking at the second column of figures from the right. The last column of figures shows the number of leading varieties selected from several years' experimental work at the Agricultural College, which we sent out for co-operative experiments to ex-students and other farmers throughout Ontario in 1897. It is the summary results of the co-operative experiments with these leading varieties, tested on various farms and in different localities, to which we will direct your attention at this time.

Co-operative Experiments in Agriculture.

Years.	Experiments.	Experimenters.	Satisfactory reports.
1886	1	12	8
1888	1	90	40
1891	12	203	126
1892	12	754	295
1893	13	1,204	416
1894	14	1,440	504
1895	15	1,699	513
1896	1	2,660	501
1897	18	2,835	610

You will notice that there has been an increase of experiments from one to eighteen; of experimenters from twelve to two thousand eight hundred and thirty-five; and of satisfactory reports from eight to six hundred and ten. The eighteen experiments which were conducted in 1897 represent nearly all the farm crops which are grown in Ontario. The varieties required for each experiment number from three to six. Each experimenter selected one of the eighteen different experiments used in 1897. The following circular, which was sent to those who desired to join in the work of 1897, gives some excellent information in regard to the work as it is being conducted at the present time:

Agricultural College, Guelph, March, 1897.

Dear Sir,—The members of the Committee on Co-operative Experiments in Agriculture are pleased to state that for 1897 they are again prepared to distribute into every township of Ontario material for experiments with fertilizers, fodder crops, roots, grains, grasses, and clovers. Upwards of 1,000 varieties of farm crops have been tested in the experimental department of the Ontario Agricultural College, Guelph, within the past eleven years. These consist of nearly all the Canadian sorts, and several hundred new varieties imported by the experimental department from different parts of Europe, Asia, Africa, Australia and the United States. Some of these have done exceedingly well in the carefully conducted experiments of several years and are now being distributed in small quantities. Great care is exercised in sending out varieties which give promise of excellent results on the farms of Ontario.

This system of co operative experimental work in Agriculture was started in 1886 with sixty plots, which were situated on twelve different farms in Ontario. Since that date, however, the work has increased from year to year, and in 1896 there were 11,124 plots, which were situated on 2,260 farms throughout Ontario.

Each person in Ontario who wishes to join in the work may choose any one of the experiments for 1897, fill out the accompanying form of application, and return the same to the director of the co-operative experiments in agriculture at as early a date as possible. The material will be furnished in the order in which the applications are received until the limited supply is exhausted. A sheet containing the instructions for conducting the various tests, and the blank forms on which to report the results of the work, will be sent to each experimenter at the time the fertilizers or seeds are forwarded. All material will be furnished entirely free of charge to each applicant, and the produce of the plots will, of course, become the property of the person who conducts the experiment. In return, the committee desires to ask that each experimer will sow all the plots belonging to the particular experiment which he has chosen for 1897, and that he will be very careful and accurate in his work, and forward to the director a complete report of the results obtained from the test, as soon as possible after the plots are harvested

Numbers of Experiments.	Names of experiments for 1897.	No. of plots required for each.	Size and shape of each plot.
1.	Testing nitrate of soda, superphosphate, muriate of potash, mixture, and no manure with corn	5	2 rods x 1 rod
2.	Testing nitrate of soda, superphospha e, muriate of potash, mixtu e and no manure with mangels	5	"
3	Testing six leading varieties of fodder corn	6	1 rod x 1 rod
4.	Growing three leguminous crops for green fodder	3	2 rods x 1 rod
5.	Growing three mixtures of grain for green fodder	3	"
6.	Testing four varieties of gra ses for hay	4	1 rod x 1 rod
7.	" clovers for hay	4	"
8.	Tes ing three varieties of buckwheat	3	"
9.	Testing four varieties of spring wheat	4	"
10.	" barley	4	"
11.	Testing five varieties of oats	5	"
12.	Testing four varieties of peas	4	"
13.	Testing three varieties of beans	3	"
14.	Testing five varieties of carrots	5	"
15.	" mangels	5	"
16.	Testing four varieties of turnips	4	"

Material for either No. 1 or No. 2 experiment will be sent by express, and for each of the others it will be forwarded by mail. All fertilizers and seeds will be sent in good time for spring seeding, providing the applications are received at an early date. The supply of material being limited, those who apply first will be surest of obtaining the desired outfit. It might be well for each applicant to make a second choice for fear the first could not be granted. The experiments selected should be indicated by using the numbers shown in the left hand column of the above table.

Particular varieties need not be mentioned, as all the kinds to be distributed are those which have done exceptionally well upon the trial plots in the experimental department.

The experimental department of the Ontario Agricultural College is the source from which the material for the co-operative work is derived In fact, experiments conducted at the College form the foundation of the whole system, and the Experimental Union forms an excellent channel by which the experiments of the College can be brought in a practical way to the farmers of Ontario, and forms an excellent avenue through which the leading varieties of farm crops can be secured by farmers. All the varieties which were distributed in 1897 were those which had been tested for several years in succession in the experimental department and which had given excellent results.

We have examined all the reports which have been received and have discarded every report which showed any signs whatever of inaccuracy. Every experimenter who did not conduct the experiment with the full amount of material ; if he did not use plots uniform in size and according to instructions ; if he did not give the exact yields, etc , of the different plots, the reports were placed to one side and were not used for the summary. We have, therefore, included in the summary, which is to be considered at this time, results which were obtained from carefully conducted experiments. While the summaries should be of great value to the farmers of Ontario as a whole, still those who have conducted the experiments have obtained much additional information regarding results of their own experiments as adapted to their own individual circumstances.

Experimenters deserve much credit in successfully conducting the various experiments during the past year. The farmers of Ontario owe much to those experimenters for the valuable reports which they forwarded and which are here presented in summary form.

LIST OF SUCCESSFUL EXPERIMENTERS.

The following list gives the names of those who furnished satisfactory reports of carefully conducted experiments in 1897 :

	Experimenter.	Post Office.	County.	Experiment.
1.	Haylow, Jas	Oriel	Oxford	Fertilizers with corn.
2.	Smales, John	Eagle	Elgin	" "
3.	Fierheller, E. E	Mount Elgin	Oxford	" "
4.	Challis, W. J	Thamesville	Kent	" "
5.	Jackson, E. J	Fulton's Mil's	Wellington	" "
6	Brisley, Wm	Thamesville	Kent	" "
7.	Canfield, Thos	Siloam	Ontario	" "
8	Sangster, R. R	Lancaster	Glengarry	" "
9.	Yarwood, E. B	Picton	Prince Edward	" "
10.	Locke, W. D	Zephyr	Ontario	" "
11.	O. A. College	Guelph	Wellington	" "
12.	Watson, R. H	Burlington	Halton	Fertilizers with mangels
13.	Brown, J. T	Thistletown	York	" "
14	Dickin, John	Milton	Halton	" "
15	Locke, W. H	Campbellford	Northumberland	" "
16.	Widdifield, J. W	Siloam	Ontario	" "
17.	Patterson, F. H	Smithville	Lincoln	" "
18	Lockhart, S	Ashburn	Ontario	" "
19.	Chalmers, Wm	Parkersville	Muskoka District	" "
20	Fair, T. J	Frankford	Hastings	" "
21	O. A. College	Guelph	Wellington	" "
22.	Merkley, Wm. H	Irena	Dundas	Corn.
23	Fair, John H	Frandford	Hastings	"
24.	Wilson, Jos	Magnetawan	Parry Sound District	"
25.	Sisley, E	Maple	York	"
26	Peacock, W	Mount Salem	Elgin	"
27	Hutton, Geo	Easton's Corners	Grenville	"
28	Fligg, E. A	Oxmead	Grey	"
29.	Crookshanks, F	Lion's Head	Bruce	"
30.	Walker, A	Metcalfe	Russell	"
31.	Purcell, D. M	Aberarder	Lambton	"
32.	Hill, Geo. & Son	Port Hope	Durham	"
33.	Burnham, L. V	Sombra	Lambton	"
34.	Armstrong, Wm. E	Stanleydale	Muskoka District	"
35.	Horsburg, Chas	Plainville	Northumberland	"
36.	Collinson, F	Scotia	Parry Sound District	"
37.	McLean, A	Little Current	Manitoulin Island	"
38	Sinclair, D	South Indian	Russell	"
39.	Parsons, J	Nairn	Middlesex	"
40.	McAsh, W	Varna	Huron	"
41.	McLaughlin, I. F	Lneury	Middlesex	"
42.	McCullough, L	Clarke	Durham	"
43.	Martin, John	Lucknow	Bruce	"
44	Jones, J. B	Burnt River	Victoria	"
45	Lamb, A., jun	Stanleydale	Muskoka District	"
46.	Tillson, E. D	Tilsonburg	Oxford	"
47.	Tipper, Wm. M	Ravenscliffe	Muskoka District	"
48.	Avery, Anson	Edville	Northumberland	"
49.	Swan, Geo	Stanleyda'e	Muskoka District	"
50.	Granger, Jos	Woodslee	Essex	"
51.	Currie, Robt	Oakdale	Lambton	"
52.	Sinclair, Jno	Whitby	Ontario	"
53.	Kidd, John	Stafford	Renfrew	"
54	Keil, C. A	Chatham	Kent	"
55.	Stewart, A	Ailsa Craig	Middlesex	"
56.	Stewart, A. F	Carleton Place	Lanark	"
57.	Dalton, John	Victoria Harbor	Simcoe	"
58	Miller, Henry	Unionville	York	"
59	Proctor, E. A. B	Bunyan	Lambton	"
60	O. A. College	Guelph	Wellington	"
61	Williams, Wm	Moore's Falls	Haliburton	Leguminous crops.
62.	Riddell, John	Bensfort	Northumberland	"
63.	Rayner, T. G	Rose Hall	Prince Edward	"

List of Successful Experimenters.—*Continued.*

	Experimenter.	Post Office.	County.	Experiment.
64.	Bettles, T. S	Porter's Hill	Huron	Leguminous crops.
65.	Bailey, J. T	Severn Bridge	Muskoka District.	"
66.	Rombough, O. M	Osnabruck Centre	Stormont	"
67.	Bayne, S. R. S	Beaver Creek	(Alberni, B.C.)	"
68.	O. A. College	Guelph	Wellington	"
69.	Stocks, Chas	Yearly's	Muskoka District.	Mixtures of grain.
70.	Kosmack, Albert	Brudenell	Renfrew	"
71.	Marshall, D	Allenford	Grey	"
72.	Hutchinson, J. H	Gooderham	Peterboro'	"
73.	O A. College	Guelph	Wellington	"
74.	Musclow, Chas	Bancroft	Hastings	Grasses.
75.	Hartman, Walter	Clarksburg	Grey	"
76.	Cassidy, E. F	Maynooth	Hastings	Clovers.
77	Smale, S. C	Oakdale	Lambton	"
78.	Snider, G. A	St. Anns	Lincoln	"
79.	Doherty, Wm	Kinmount	Victoria	"
80.	Nelson Bros	Paisley	Bruce	"
81.	Chambers, E	Port Colborne	Welland	"
82.	Butterworth, Ed	Horncastle	Victoria	"
83.	Speiran, John	Henfryn	Huron	"
84.	Clipsham, M	Sparrow Lake	Muskoka District	"
85.	Stephen, Alex	Desboro	Grey	"
86.	Betz, Adam	Mongolia	York	"
87.	Julien, John A	Thamesville	Kent	"
88.	Pascoe, L. C	Enfield	Durham	Buckwheat.
89.	Cruickshank, J	Thamesville	Kent	"
90.	Reinhart, J. B	Port Elgin	Russell	"
91.	Miller, Henry	Unionville	York	"
92.	McCuaig, A	Priceville	Grey	Spring wheat.
93.	England, M	Novar	Muskoka District.	"
94.	Reynolds, John	Solina	Durham	"
95.	McCormick, J. J	Trenton	Northumberland	"
96.	Morkin, John	Whalen	Middlesex	"
97.	Lawrence, O. A	Sheridan	Ralton	"
98.	Maguire, H	Essonville	Peterboro'	"
99.	Pearce, I. F	Bowmanville	Durham	"
100.	Lemon, Jas	Walter's Falls	Grey	"
101.	Brown, S	Novar	Muskoka District.	"
102.	Tobin, Ed	Hazzard's Corners	Hastings	"
103.	Mountain, Wm	Avonbank	Perth	"
104.	Standen, W. J	Minesing	Muskoka District.	"
105.	O. A. College	Guelph	Wellington	"
106.	Lake, V	Yarker	Frontenac	"
107.	Eagle, Wm	Yeovil	Grey	"
108.	Whittaker, J. J	Guelph	Wellington	"
109.	Stewart, R. C	Coldwater	Simcoe	"
116.	Bock, Wm	Spring Bay	Manitoulin Island	"
111.	Tiegs, T	Augsburg	Renfrew	"
112.	McCrae, R. F	Lochiel	Glengarry	"
113.	Schweyer, J. W	Fisherville	Haldimand	"
114.	Madden, D	Chepstow	Bruce	"
115.	Glen, Chas	Powassan	Parry Sound District.	"
116.	Bowles, W. R	Randolph	Simcoe	"
117.	Cinnamon, R	Ormond	Dundas	"
118.	Southam, Jas	Bury's Green	Victoria	"
119.	Lavallee, R. N	Harvey	Renfrew	"
120.	Wagner, H	Cedarville	Grey	"
121.	Moore, W. C	Ophir	Algoma District	"
122.	Goard, F	Lorneville	Victoria	"
123.	Tesky Jas	Croydon	Addington	Barley.
124.	Hicks, H. M	Lochlin	Haliburton	"
125.	Speir, Jas	Brussels	Huron	"
126.	Gray, Roderick	Seaforth	Huron	"
127.	Neilson, J. D	Thedford	Lambton	"
128.	Boulton, A. E	Cass City	Michigan (U.S.A.)	"
129.	Scott, Geo	Waubuno	Lambton	"
130.	Joyner, H. C	Novar	Muskoka District	"
131.	McAsh, Jno	Varna	Huron	"
132.	Hastie, Wm	Gorrie	Huron	"

LIST OF SUCCESSFUL EXPERIMENTERS.—*Continued.*

Experimenter.	Post Office.	County.	Experiment.
133. Fewster, O. L.	Horning's Mills	Dufferin	Barley.
134. Joyner, J. E.	Novar	Muskoka District	"
135. Johnston, Jas.	Lavender	Dufferin	"
126. Kernighan, J. N.	Benmiller	Huron	"
137. Brodie, J. E.	Vandeleur	Grey	"
138. McIntee, Jno.	Ayton	Grey	"
139. Bowman, C. D.	West Montrose	Waterloo	"
140. Gies, C. R.	Heidelburg	Waterloo	"
141. Tinney, J. D.	Oakwood	Victoria	"
142. O. A. College	Guelph	Wellington	"
143. Boncher, Wm	Wilstead	Leeds	Oats.
144. Graham, Jos.	Claude	Peel	"
145. Shelp, Jno. H.	Dickenson	Russell	"
146. Hastie, W. R.	Gorrie	Huron	"
147. Downey, Geo.	Castiederg	Peel	"
148. Binnie, Thos.	Brisbane	Wellington	"
149. Irwin, Jas.	Camilla	Dufferin	"
150. Andrews, Jas	Durham	Grey	
151. Black, Jno. H.	Allenford	Bruce	"
152. Caslick, A	Teeswater	Bruce	"
153. Naftel, C. J. S.	Goderich	Huron	"
154. Russell, Robt	Blairton	Peterboro	"
155. Howes, C. J.	Holiday	Oxford	"
156. Haines, Wm. T.	Parry Sound	Parry Sound District	"
157. Meads, E.	Axe Lake	Parry Sound District	"
158. Peter, S.	Atwood	Perth	"
159. Landon, J. B.	Lansdowne	Leeds	"
160. Nodwell, R. D.	Hillsburg	Wellington	"
161. Ross, Jno.	Ilderton	Middlesex	"
162. Duncan, D. W.	Greensville	Wentworth	"
163. Doupe S.	Kincardine	Bruce	"
164. Gies, Ernest	Zurich	Huron	"
165. Osborne, Frank	Echo Bay	Algoma District	"
166. Huston, Jos.	Doe Lake	Parry Sound District	"
167. Middleton, Chas.	Mount Hope	Bruce	"
168. Terrill, Wm.	Albury	Prince Edward	"
169. Cook, Jas.	Thompson	Algoma District	"
170. Young, Gordon	Carlow	Huron	"
171. Paterson, T. A.	Agincourt	York	"
173. Burley, Wm.	Thedford	Lambton	"
173. O'Gorman, Jas.	Shamrock	Rentrew	"
174. Oram, D.	Combermere	Hastings	"
175. Doherty, Chas.	Wildfield	Peel	"
176. Field, Wm	Napier	Middlesex	"
177. Phillips, H.	Sundridge	Parry Sound District	"
178. Brewer, G. M.	Smithville	Lincoln	"
179. Sugden, Thos	Thorndale	Middlesex	"
180. Quinn, Wm	Yearly's	Muskoka District	"
181. Watson, Jno.	Bracebridge	Muskoka District	"
182. Willsie, J.	Thedford	Lambton	"
183. Scott, R.	Powassan	Parry Sound District	"
184. Rear, Wm.	Mount Albert	York	"
185. McIntosh, A. G.	Chesley	Bruce	"
186. Irwin, Wm.	Waldemar	Dufferin	"
187. Clark, Jno. W.	Fonthill	Welland	"
188. Abbot, F. G.	Lucan	Middlesex	"
189. Jennings, Wm.	Forest	Lambton	"
190. McKenzie, W. A.	Mitchell	Perth	"
191. McKay, Geo.	Teeswater	Bruce	"
192. Krich, Jas. A.	Elcho	Lincoln	"
193. MacMahan, Jas	Wyoming	Lambton	"
194. Watson, T. H.	Sonya	Victoria	"
195. Clemmis, Robt.	Lady Bank	Grey	"
196. Cornell, F. W.	Copetown	Wentworth	"
197. Holdershaw, Jno.	Manilla	Victoria	"
198. Johnston, W. A.	Tilsonburg	Oxford	"
199. McKay, Geo.	Thamesford	Oxford	"
200. Schroder, F.	Minden	Haliburton	"
201. Stone, J. B.	Norham	Northumberland	"

LIST OF SUCCESSFUL EXPERIMENTERS —*Continued.*

Experimenter.	Post Office.	County.	Experiment.
202. Carrol, T. H.	Marsville	Dufferin	Oats.
203. Blunden, H. A.	Sarnia	Lambton	"
204. Jinkinson, Jno.	Ashton	Carleton	"
205. Granger, J. H.	Nottawa	Simcoe	"
206. Huggerd, R. L.	Whitby	Ontario	"
207. Richardson, D.	Queenston	Lincoln	"
208. Irwin, Chas	Gorrie	Huron	"
209. Rowand, Wm	Walkerton	Bruce	"
210. Leggate, Robt.	Arkona	Lambton	"
211. Sheane, Jno.	Glammis	Bruce	"
212. Tuplin, Jno	Sundridge	Parry Sound District	"
213. Armstrong, Thos.	Stanleydale	Muskoka District	"
214. Houston, J. R.	Paisley	Bruce	"
215. Hambly, E. J.	Nobleton	York	"
216. Thompson, Jno.	Woodford	Grey	"
217. Henderson, Jno.	The Ridge	Hastings	"
218. Leishman, A. N.	Marnoch	Huron	"
219. Burns, Simon	Rutherford	Lambton	"
220. Hamilton, J. M.	Collingwood	Simcoe	"
221. Groh, Anson	Preston	Waterloo	"
222. Upshal, Chas.	Port Elgin	Bruce	"
223. Love, Jos.	Hopeville	Grey	"
224. Gilmour, M.	Doe Lake	Parry Sound District	"
225. Inglehart, H	Merton	Halton	"
226. Pope, Geo.	Clinton	Huron	"
227. Nichol, Jno.	Priceville	Grey	"
228. O. A. College.	Guelph	Wellington	"
229. McNaughton, P.	Arva	Middlesex	Peas.
230. Grant, D. J.	Moose Creek	Stormont	"
231. Newton, O. E.	Violet Hill	Dufferin	"
232. Clemmis, D.	Feversham	Grey	"
233. McEwen, D.	Clinton	Huron	"
234. Findlay, R. G.	Copper Cliff	Algoma District	"
235. Jack, Jno.,	Corbetton	Dufferin	"
236. McGregor, G. T.	Peepabun	Wellington	"
237. Murrell, R.	Cobble Hill	Middlesex	"
238. McGibbon, A. L.	L'Amable	Hastings	"
239. Chappell, Wm. E.	Holland Landing	York	"
240. Scott, Adam	Lakelet	Huron	"
241. Douglas, Geo.	Wilsoncroft	Lambton	"
242. Fraser, Jas.	Burnstown	Renfrew	"
243. Last, Geo	Louise	Grey	"
244. Booth, Wm	Uxbridge	Ontario	"
245. Hague, B	L'Amable	Hastings	"
246. Krunz, N	Golden Lake	Renfrew	"
247. Muir, J. B	North Bruce	Bruce	"
248. Kennedy, A.	Limehouse	Halton	"
249. McKinnon, H	Erin	Wellington	"
250. Diebold, J	Carlsruhe	Bruce	"
251. Kelly, R	Alton	Peel	"
252. Aunger, F. L	Blairton	Peterboro	"
253. Duncan, A.	Springbank	Middlesex	"
254. Atkinson, T.	Tottenham	Simcoe	"
255. Vansickle, O	Trinity	Wentworth	"
256. Tuplin, Wm	Sundridge	Parry Sound District	"
257. Rammage, Wm	Dromore	Grey	"
258. Leggate, R.	Arkona	Lambton	"
259. Bishop, Wm	Doe Lake	Parry Sound	"
260. Hamilton, H. E	Collingwood	Simcoe	"
261. De Hart, N.	Creighton	Simcoe	"
262. McKessock, Jno.	Massie	Grey	"
263. Bryce, Thos	Emsdale	Parry Sound	"
264. Binnie, Geo	Bunessan	Grey	"
265. Yeo, Wm. G	Sonya	Ontario	"
266. Watson, Thos	Isherwood	Rainy River District	"
267. Hugill, Thos	Coboconk	Victoria	"
268. Fleming, S	Stella	Lennox	"
269. Warren, J. B.	Gamebridge	Ontario	"
270. Lane, Jno	Gore Bay	Algoma	"

LIST OF SUCCESSFUL EXPERIMENTERS.—*Continued.*

	Experimenter.	Post Office.	County.	Experiment.
271.	Knox, H. L	Lynden	Wentworth	Peas.
272.	Weese, Wm. H	Frankford	Hastings	"
273.	Wilson, John	Marsville	Dufferin	"
274.	Morley, Thos	Whalen	Middlesex	"
275.	Greenway, W. J	Cambray	Victoria	"
276.	Russell, W. W	Uhthoff	Simcoe	"
277.	Bennett, S. G	Midland	Simcoe	"
278.	Garbutt, J. H.	Peterborough	Peterboro	"
279.	Heacock, G. W	Aurora	York	"
280.	Brown, C. D	Hayesville	Waterloo	"
281.	McLaren, D	McGarry	Lanark	"
282.	Way, W. J	Merlin	Kent	"
283.	Prout, Ed.	Bowmanville	Durham	"
284.	McRenor, W. J	Chatham	Kent	"
285.	Duncan, Alex	Greely	Russell	Beans.
286.	Mowbray, W	Sarnia	Lambton	"
287.	Dolsen, W. J	Chatham	Kent	"
288.	Gray, J. H	Oxford Centre	Oxford	"
289.	Sargent, S	North Ridge	Essex	"
290.	Adams, C. D	Cardinal	Grenville	"
291.	Thurman, H. H	Yearly's	Muskoka District	Carrots.
292.	Claister, Geo	Crosshill	Waterloo	"
293.	Adolph, Louis	Wallace	Perth	"
294.	Brown, Ed	Huntsville	Muskoka District	"
295.	Hogarth, S. J	Exeter	Huron	"
296.	Quinn, A. J	Yearly's	Muskoka	"
297.	Richmond, Jno	Blyth	Huron	"
298.	Pettigrew, Jas	Barrow Bay	Bruce	"
299.	Trembley, W	Warren	Nipissing	"
300.	Piper, Wm	Salford	Oxford	"
301.	Weir, H	Spencerville	Grenville	"
302.	Ferguson, J. H	Brampton	Peel	"
303.	Edge, Daniel	Edge Hill	Grey	"
304.	Beattie, D.	Chapman	Hastings	"
305.	Whiles, Alice	Scotia	Muskoka District	"
306.	Aitchison, D	Seaforth	Huron	"
307	Young, Jno	Chepstow	Bruce	"
308	Blaser, Miss E	Rye	Parry Sound District	"
309	Morrison, Jas. A	Hulbert	Lundas	"
310.	Willsie, John	Thedford	Lambton	"
311	Irwin, F	Gorrie	Huron	"
312	Swan, Jas. H	Stanleydale	Muskoka District	"
313	Tufts, R. & Son	Tweed	Hastings	"
314	Robb, Wm	Brussels	Huron	"
315.	Ward, Alfred	Ancaster	Wentworth	"
316	Best, Jno. H	Balmoral	Haldimand	"
317.	Lunn, Thos	Burtch	Brant	"
318.	Canning, S	Churchill	Simcoe	"
319	O. A. College	Guelph	Wellington	"
320	Coatsworth, J. H	Ruthven	Essex	Mangel
321.	Hart, C. H	Picton	Prince Edward	"
322.	Smith, A	Lucknow	Huron	"
323	Gadd, Thos	Varney	Grey	"
324	Todd, Mary	Randolph	Simcoe	"
325	McCulloch, Jas	Paisley	Bruce	"
326	Kincaid, P	Peabody	Grey	"
327	Burns, Wm J	Edmonton	Alberta (N.W.T.)	"
328.	Gilroy, W. J	Myrtle	Ontario	"
329	Kirstine, Wm	Walkerton	Bruce	"
330.	Robertson, R	Shanty Bay	Simcoe	"
331.	Paterson, A	Coldwater	Simcoe	"
332.	Maddock, J. R	Randolph	Simcoe	"
333.	Neville, C. W	Newburg	Lennox	"
334.	Barlow, R	Addison	Leeds	"
335.	Percival, J. M	Addison	Leeds	"
336.	Casselman, E. F	Katrine	Parry Sound District	"
337	Closson Bros	Highland Creek	York	"
338	Bell, Jas	Harper	Lanark	"
339.	Acklan, R	Mitchell	Perth	"

LIST OF SUCCESSFUL EXPERIMENTERS.—*Continued.*

	Experimenter.	Post Office.	County.	Experiment.
340.	Chislett, T	Flesherton	Grey	Mangels.
341.	Annis, W. T	Mitchell	Perth	"
342.	Williams, W. J	Bloomington	York	"
343.	Hymers, Geo. E	Beaver Mines	Algoma District	"
344.	Sangster, R. R	Lancaster	Glengarry	"
345.	Avery, Geo	Edville	Northumberland	"
346.	Murphy, S	Straffordville	Elgin	"
347.	Powell, H. O	Brockville	Leeds	"
348.	Leitch, A. M	Kilmartin	Middlesex	"
349.	Switzer, E. T	Medina	Oxford	"
350.	Jary, R. J	Lakefield	Peterboro	"
351.	O. A. College	Guelph	Wellington	"
352.	Carroll, Jno	Walkerton	Bruce	Turnips.
353.	Mulhern, E	Isherwood	Rainy River	"
354.	Williamson, Jno	Norwood	Peterboro	"
355.	Cranley, Jno., sr	Douro	Peterboro	"
356.	King, Chas	Strathallan	Oxford	"
357.	Cummings, W. J	Spencerville	Grenville	"
358.	Quinn, J. B	Dufferin	Frontenac	"
359.	Weir, Robt	Spencerville	Grenville	"
360.	Heaner, G. M	Burford	Brant	Potatoes.
361.	Douglas, Thos	Strathroy	Middlesex	"
362.	Shuh, Frank	Waterloo	Waterloo	"
363.	Tye, C. W	Haysville	Waterloo	"
364.	Petrie, A	Fergus	Wellington	"
365.	McNight, Wm	Westport	Leeds	"
366.	Campbell, J. A	Simcoe	Norfolk	"
367.	Warren, Jno	Harper	Lanark	"
368.	Baird, George	Clinton	Huron	"
369.	Adams, W. J	Dromore	Grey	"
370.	Morton, H	Ashton	Carleton	"
371.	Torrance, Geo	Guelph	Wellington	"
372.	Alderson, J. W	Guelph	Wellington	"
373.	Shantz, A	Waterloo	Waterloo	"
374.	McLean, J. W	Kertch	Lambton	"
375.	McNaughton, K	Walkerton	Bruce	"
376.	Davison, Miss G. E	Mount Forest	Grey	"
377.	Mackie, Jas	Mount Dennis	York	"
378	Brownlee, E	Harper	Lanark	"
379.	Miller, T. B	Kincardine	Bruce	"
380.	Moffat, J. G	Sheffield	Wentworth	Winter wheat (Set 1.
381.	Crabb, R	Bronte	Halton	" "
382.	Paterson, R	Kirkwall	Wentworth	" "
383.	Wendt, Jno	Mildmay	Bruce	" "
384.	Ridgway, P. F	Christina	Middlesex	" "
385.	Williams, Thos	Mount Wolfe	York	" "
386.	Keat, A	Dalston	Simcoe	" "
387.	Blagdon, J. T	Lowville	Halton	" "
388.	Jeneroux, F	Wycombe	Norfolk	" "
389.	Cullis, Fred	Vandeleur	Grey	" "
390.	Burrell, W. H	Ivanhoe	Hastings	" "
391.	Cassidy, T. M	Maynooth	Hastings	" "
392.	Dennis, Wm. C	Bracebridge	Muskoka District	" "
393.	McGregor, D. R	Balaclava	Grey	" "
394.	Atkins, M	Heathcote	Grey	" "
395.	Watson, Jno	Port Perry	Ontario	" "
396.	Carter, Wm	Pelee Island	Essex	" "
397.	Eastwood, Jas	Tarbert	Dufferin	" "
398.	Keir, J. W	Gore Bay	Algoma	" "
399.	Glenn, J. E	Ameliasburg	Prince Edward	" "
400.	Paul, Tnos	Lady Bank	Grey	" "
401.	Marshall, R. H	Embro	Oxford	" "
402.	Tole, E. B	Blenheim	Kent	" "
403.	Redman, W	Echo Bay	Algoma	" "
404.	Nixon, C	Mandeville	Parry Sound District	" "
405.	Osborne, S. B	Echo Bay	Algoma District	" "
406.	McGowan, D	Rob Roy	Grey	" "
407.	McKee, Jno	Markdale	Grey	" "
408.	Mayes, J. W	Coe Hill	Hastings	" "

List of Successful Experimenters.—*Continued.*

	Experimenter.	Post Office.	County.	Experiment.
409.	Spence, Geo	Hopeville	Grey	Winter wheat (Set 1.)
410.	Sanders, T. R.	Guthrie	Simcoe	" "
411.	McDonald, T. P	Teeswater	Bruce	" "
412.	Leanon, H. M	Maidstone	Essex	" "
413.	Weaver, Geo	Otterville	Oxford	" "
414.	Reesor, P. H	Markham	York	" "
415.	Eaton, Thos	Byng	Haldimand	" "
416.	Burkholder, P. C.	Tapleytown	Wentworth	" "
417.	Elmore, Wm	Strathburn	Middlesex	" "
418.	Monkman, W. D	Bolton	Peel	" "
419.	Cohoe, Andrew	Norwich	Oxford	" "
420.	Turner, W. H	Ridgetown	Kent	" "
421.	Schooly, A	Luton	Elgin	" "
422.	Meyer, Jacob	Blake	Huron	" "
423.	May, Jno	Exeter	Huron	" "
424.	Entricken, D	Leamington	Essex	" "
425.	Calvert, D	Thamesford	Middlesex	" "
426.	King, M	Snyder	Welland	" "
427.	Shippy, T. A	Cedar Springs	Kent	" "
428.	Wray, F. H	Sykeston	Lambton	" "
429.	Baird, Geo.	Clinton	Huron	" "
430.	Hurst, J. G	Conestoga	Waterloo	" "
431.	Neil, Fred	West McGillivray	Middlesex	" "
432.	Cicile, R	Tecumseh	Essex	" "
433.	Bray, Jos	Huntsville	Muskoka District	" "
434.	Remmer, E	Pickering	Ontario	" "
435.	Becking, Wm	Teeswater	Bruce	" "
436.	Allen, D	Chesley	Bruce	" "
437.	Lee, Thos	Londesboro	Huron	" "
438.	Hartley, D	Milton West	Halton	" "
439.	Tufts, Robt	Tweed	Hastings	" "
440.	Robson, S	Purpleville	York	" "
441.	Husband, E. M	Cairngorm	Middlesex	" "
442.	Stewart, W. T	Portal	Bruce	" "
443.	McNair, Jno	Cranbrook	Huron	" "
444.	Braithwait, R.	Aughrim	Lambton	" "
445.	Hanshaw, G. W	Evelyn	Middlesex	" "
446.	Marshall, Ed	Erin	Wellington	" "
447.	Shiells, Peter	Amberley	Huron	" "
448.	Phillips, R	Manitowaning	Manitoulin Island	" "
449.	Virtue, H	Vandecar	Brant	" "
450.	McClintock, J. F.	Manchester	Ontario	" "
451.	McVety, Wm	Seaforth	Huron	" "
452.	Trachsel, E. M	Shakespeare	Perth	" "
453.	Murphy, Jno	Barrie	Simcoe	" "
454.	Nelson, H	Presque Isle	Grey	" "
455.	Cummings, J. M	Randolph	Simcoe	" "
456.	Kemp, R. H	Beamsville	Lincoln	" "
457.	Lawrence, O. A	Sheridan	Halton	" "
458.	Crawford, D. S	Purple Valley	Bruce	" "
459.	Weaver, T. C	Cargill	Bruce	" "
460.	Sharp, W. H	Shallow Lake	Grey	" "
461.	Stimpson, W. G	Lancelot	Muskoka District	" "
462.	Dwyer, D	West Flambo.o'	Wentworth	" "
463.	Poff, T. A	Green View	Hastings	" "
464.	Poff, Jno	Green View	Hastings	" "
465.	Poff, S	Green View	Hastings	" "
466.	Moffatt, J. S	Bognor	Grey	" "
467.	Brown, C	Foreman	Haldimand	" "
468.	Brown, Chas	Foreman	Haldimand	" "
469.	Kennedy, L	Agincourt	York	" "
470	McRae, Jas	Cherrywood	Ontario	" "
471.	Campbell, S. C	Iris	Simcoe	" "
472.	Henderson, W. J	Wingham	Huron	" "
473.	Alton, D	Echo Bay	Algoma District	" "
474.	Donergan, Wm	Rutherford	Bothwell	" "
475.	York, Alex	Elliot's Corners	Simcoe	" "
476.	Dyner, N. J	Granger	Cardwell	" "
477.	Knox, A	Granton	Perth	" "

List of Successful Experimenters.—*Continued.*

Experimenter.	Post Office.	County.	Experimenter.
478. Stewart, Alex., sr	Wroxeter	Huron	Winter wheat (Set 1.)
479. McPhail, D	Strathroy	Middlesex	" "
480. Ross, G. M	Fernhill	Middlesex	" "
481. Smith, W	Meaford	Grey	" "
482. Caskey, James	Tiverton	Bruce	" "
483. Stewart, D	Corbetton	Dufferin	" "
484. McLean, D	Newton Robinson	Simcoe	" "
485. Moulding, R. J	Vavasour	Muskoka District	" "
486. Downey, Jas	Newton Robinson	Simcoe	" "
487. Downey, Wm	Newton Robinson	Simcoe	" "
488. O. A. College	Guelph	Wellington	" "
489. Reesor, J	Markham	York	" "
490. Parks, J	Westfield	Huron	Winter wheat (Set 2).
491. Parks, W. J	Westfield	Huron	" "
392. Tesky, E	Dealtown	Kent	" "
493. Pierce, Moses	Brinsley	Middlesex	" "
494 Hoath, R. A	Hyde Park	Middlesex	" "
495. Woods, Jas	Westfield	Huron	" "
496. Wheeler, E	Wheeler	Lambton	" "
497. Day, H F	Thamesford	Oxford	" "
498. Smailes, Jno	Eagle	Elgin	" "
499. Murray, T. B	Avening	Simcoe	" "
500. Locke, W. H	Campbellford	Northumberland	" "
501. Kincaid, Peter	Peabody	Grey	" "
502. Wilson, Purdon	Streetsville	Peel	" "
503. Cornish, T. J. S	Mossley	Middlesex	" "
504. Purcell, D.M	Aberarder	Lambton	" "
505. Blackburn, Jno	Gillies Hill	Bruce	" "
506. Walker, W. E	Canfield	Haldimand	" "
507. Sutherland, Chas	Strathroy	Middlesex	" "
508 Irwin, Chas	Gorrie	Huron	" "
509. Hewlitt, Jos	Hutton House	Muskoka District	" "
510. Thompson, Jas	Belfast	Huron	" "
511. Davison, Wm	Paisley	Bruce	" "
512. Laird, J. W	Orangeville	Dufferin	" "
513. Carter, O	Cassel	Oxford	" "
514. Meyer, J. E	Linwood	Waterloo	" "
515. Horn, Jos	Monkton	Perth	" "
516. McCrie, W. A	Durham	Grey	" "
517. Hall, Johnston	Keady	Grey	" "
518. Cundick, A	Warwick	Lambton	" "
519. Mountain, Wm	Avonbank	Perth	" "
520. Howell, Thos	Kimball	Grey	" "
521. Stewart, D	Wroxeter	Huron	" "
522 Firth, Jno	Edge Hill	Grey	" "
523. Gray, J. N	Poplar Hill	Middlesex	" "
524. Murphy, A	Wingham	Huron	" "
525. Norton, L.D	Lambeth	Middlesex	" "
526. Grierson, Jno	Ravenna	Grey	" "
527. McKinnon, M	Hillsburg	Wellington	" "
528. Bedggood, Thos	Crumlin	Middlesex	" "
529. Newton, O. E	Violet Hill	Dufferin	" "
530. Mactie, C M	Appin	Middlesex	" "
531. Dyer, G. W	Holly	Simcoe	"
532 Kannawin, R	Snelburne	Dufferin	"
533. Upshal, Chas	Port Elgin	Bruce	"
534. Maddock, E. A	Randolph	Simcoe	" "
535. Dwyer, Alfred	Holly	Simcoe	" "
536. Wake, F	Violet Hill	Dufferin	" "
537. Stephenson, T	Ingersoll	Oxford	" "
538. Bond, Jno	Unionville	York	" "
539. Stephens, W. T	Aurora	York	" "
540 Baxter, J	St. Paul's Station	Perth	" "
541. Haist, A. J	South Cayuga	Haldimand	" "
542. Doyle, H	Ayton	Grey	" "
543. Krick, G. E	Elcho	Monck	" "
544. Skelly, E. A	Colgan	Simcoe	" "
545. Willson, W. H	Sparta	Elgin	" "
546. Bertrand, H	Courtright	Lambton	" "

LIST OF SUCCESSFUL EXPERIMENTERS.—*Concluded.*

	Experimenter.	Post Office.	County.	Experiment.
547.	Atkinson, H	Arkell	Wellington	Winter wheat (Set 2.)
548.	Reid, N. W	Meaford	Grey	" "
549.	Williamson, J	Mount Forest	Grey	" "
550.	Lennon, Thos	Maidstone	Essex	" "
551.	Little, Jno	Mount Vernon	Brant	" "
552.	Scott, Andrew	Durham	Grey	" "
553.	Brown, Jno. E	Silver Water	Algoma District	" "
554.	Meirouski, Jno	Bamberg	Waterloo	" "
555	O. A. College	Guelph	Wellington	" "
556.	Brown, Jno. T	Thistletown	York	" "
557.	Foster, Jos	Varna	Huron	" "
558.	Stephens, Thos. W	Aurora	York	" "
559.	Cline, Phillip	Effingham	Wellan l	" (Set 3.)
560.	Fisher, W. N	South Middleton	Norfolk	" "
561.	Field, Wm	Napier	Middlesex	" "
562.	Stroth. G. R	Conestoga	Waterloo	" "
563.	Frith, J. E	Princeton	Oxford	" "
564.	Russell. W. W	Uhthoff	Simcoe	" "
565.	Jaques, S	Whalen	Huron	" "
566.	Martin, Thos	Utoxeter	Lambton	" "
567.	Lister, Wm	Rockford	Haldimand	" "
568.	Foote, S. P	Bethesda	York	" "
569.	Giles, Jas	Bethesda	York	" "
570.	Foote, Thos	Bethesda	York	" "
571.	McMahan, Jas	Wyoming	Lambton	" "
572	Island, J. M	Orangeville	Dufferin	" "
573.	Lennon, Jas	Walter's Falls	Grey	" "
574.	McVannel, D	St. Marys	Perth	" "
575.	Neilson, J. D	Thedford	Lambton	" "
576	Ovens, Wm	Thamesford	Middlesex	" "
577.	McLean, R. B	Kippen	Huron	" "
578.	Murrell, Robt	Cobble Hill	Middlesex	" "
579.	Lewis, Isaac	West McGillivray	Middlesex	" "
580.	Dell, Oliver	Becher	Lambton	" "
581.	Young, J. C	Gravenhurst	Simcoe	" "
582.	Toole. D. J	Glen Oak	Middlesex	" "
583.	Miller, H	Unionville	York	" "
584	Robertson, M. L	Eberts	Kent	" "
585.	Graham, D. L	Wallbridge	Hastings	" "
586.	Scott, S. J	Brinsley	Middlesex	" "
587.	Wake, Jno	Violet Hill	Dufferin	" "
588.	Julien, Jno. A	Thamesville	Kent	" "
589.	Julien, Alex	Thamesville	Kent	" "
590.	McKay. Jas	South Zorra	Oxford	" "
591.	Fitzgerald, Geo	Ballymote	Middlesex	" "
592.	Hughson, J. S	Ouvry	Kent	" "
593.	Watson, Chas	Dromore	Grey	" "
594.	Hugill, J. W	Coboconk	Victoria	" "
595.	Hutchison, Jas	Pond Mills	Middlesex	" "
596.	Last, Geo	Louise	Grey	" "
597.	Maddock, J. R	Randolph	Simcoe	" "
598.	Davis, F	Foxboro'	Hastings	" "
599.	Main, Chas	Shetland	Lambton	" "
600.	Skelly, T. J. M	Colgan	Simcoe	" "
601.	Leigh. W. M	Kirkton	Perth	" "
602.	Wood, R. T	Thistletown	York	" "
603.	Willson, S. L	Palmerston	Perth	" "
604.	Hollingreen, Wm	Hornby	Halton	" "
605.	Stewart, T. E	Mount Vernon	Brant	" "
606	McNaughton, K	Walkerton	Bruce	" "
607.	Williamson, Jno	Norwood	Peterborough	" "
608.	McDonald, H. C	Fernhill	Middlesex	" "
609.	Stewart, Jno. F	Corbetton	Dufferin	" "
610.	O. A. College	Guelph	Wellington	" "

REPORTS OF EXPERIMENTS.

The instructions for each experiment, the summary results of successful experiments in 1897, and the conclusions from each experiment are here presented.

No. 1 Testing Nitrate of Soda, Superphosphate, Muriate of Potash, Mixture, and no Fertilizer with Corn.

1. Upon uniform land which has received no manure for at least four years, mark off five plots, each two rods long by one rod wide.

2. Mark out each plot into ten rows one way by five rows the other way, allowing 3 feet 4 inches between the rows.

3. Sow the different fertilizers as indicated on the package.

4. Plant six kernels of the Salzer's North Dakota Corn at each of the places where the lines touch and thus make fifty hills on each plot.

5. When the plants are about four inches tall, thin out to four plants per hill.

6. Cut the corn before it is injured by frost.

7. Weigh the whole crop from each plot as soon as cut, and then husk, weigh and count the ears, and examine the condition of the grain.

No. 2—Testing Nitrate of Soda, Superphosphate, Muriate of Potash, Mixture, and no Fertilizer with Mangels.

1. Upon uniform land which has received no manure for at least four years, mark off five plots, each two rods long by one rod wide.

2. Leave a path three feet wide between each two plots.

3. Make eight drills, twenty-five inches apart and two rods long, in each plot.

4. Sow the different fertilizers as indicated by the labels on the package.

5. Sow the Carter's Champion Yellow Intermediate Mangel seed as evenly as possible on the five plots.

6. Thin the young plants when about three inches tall to a distance of ten inches apart in the drills, and leave 316 roots in each plot.

7. Again count the plants when about eight inches tall, and, if necessary, remove a few of the plants from some plots in order that the number of roots on the different plots will be exactly the same.

8. When harvesting be careful to weigh and count the roots correctly and record the result neatly.

Fertilizers.	Yield per acre.		
	Oats, 5 years, 74 tests. bush. grain.	Corn, 1 year, 11 tests, tons of total crop.	Mangels, 1 year, 10 tests, tons of roots.
Mixture	48.7	9.3	22 1
Nitrate of soda	46 3	9 5	23.4
Muriate of potash	43.8	9.7	21.8
Superphosphate	43.6	8.8	22.9
No fertilizers	38.9	7.8	18.3

For five years in succession, previous to 1897, an experiment was conducted by using fertilizers with oats. In the past year, however, the same fertilizers were used with corn and mangels. The report given above gives the summary results of the different fertilizers used with the three classes of farm crops. Both the fertilizers and the seeds were sent from the College to the experimenters during each of these years. In every instance the nitrate of soda and the muriate of potash were applied at the rate of

160 pounds per acre and the superphosphate at the rate of 320 pounds per acre. The mixture was composed of one-third of each of these fertilizers, making in all 213 1-3 pounds. The four fertilizers cost about the same amount per acre—nitrate of soda $4.20, muriate of potash $4.48, superphosphate $4.16, and mixture $4.35. The nitrate of soda was applied when the plants were about two inches in height, and the muriate of potash and superphosphate at the time of sowing the seed.

Conclusions.

1. The summary results from the application of fertilizers show that the largest average yield was produced by using the "mixture" or "complete" fertilizer with oats, the potassic fertilizer with corn, and the nitrogenous fertilizers with mangels.

2. The land which received the mixed fertilizer gave an average yield of 9.8 bushels of oats per acre more than land unfertilized.

3. The land which received muriate of potash gave an average yield of 1.9 tons of green corn per acre more than land unfertilized.

4. Land which received the nitrate of soda gave an average yield of 5.1 tons of mangel wurtzels per acre more than unfertilized land.

5. The unfertilized land gave a less yield than fertilized land in the case of oats, corn and mangels.

6. By the time the fertilizers have been used on different farms throughout Ontario with corn and mangels for five years in succession, as in the case of oats, some most valuable information should be obtained.

No. 3—Testing Six Leading Varieties of Corn.

1. Prepare for sowing all the varieties upon six uniform plots, each plot being exactly one rod square.

2. Mark out each plot into five rows both ways, allowing three feet four inches between the rows.

3. Plant each variety of corn upon its respective plot. Drop six kernels at each of the places where the lines touch, and thus make twenty-five hills of each variety.

4. When the corn is about four inches high, thin out to four plants per hill.

5. Cut each variety before frost, and at the time when its stage of growth corresponds to the roasting condition of field corn, or when the grain is partly glazed. Weigh the whole crop from each plot as soon as cut, and then husk, weigh, and count the ears, and examine the condition of the grain.

Varieties.	Height of crop.	Yield per acre.	
		Ears.	Whole crop.
	inche .	tons.	tons.
Cloud's Early Yellow	112	3.8	18.89
Mammoth Cuban	106	3.9	16.07
Wisconsin Earliest white Dent	101	3.8	15.56
Evergeen Sweet	90	3.6	15.10
Salzer's North Dakota	91	3 9	14.61
Compton's Early	88	3.8	14.21

Within the last ten years two hundred and nineteen varieties of corn have been tested in the experimental department. Of this number forty-eight varieties have now been grown in the experimental grounds for seven years in succession. From among

these forty-eight varieties six were selected for co-operative experiments in 1897, and successful experiments were conducted on thirty-nine Ontario farms in the last year. The varieties sent out in 1897 include some of the best of the large, medium and small varieties of corn, in order that each experimenter could determine which varieties would give the best results in his own particular locality and on his own particular soil. The Cloud's Early Yellow is only suited for the southern part of Ontario. The Mammoth Cuban, Wisconsin Earliest White Dent, and Evergreen Sweet, however, are very well suited to the central part of the Province. The Salzer's North Dakota and Compton's Early are best adapted to the parts of the Province where larger varieties cannot reach a proper stage of maturity.

Conclusions.

1. In the co-operative experiments over Ontario in 1897, the Cloud's Early Yellow Dent Corn appeared to be well suited to warm soils in southern Ontario: the Mammoth Cuban, Wisconsin Earliest White Dent, and Evergreen Sweet to central Ontario, and the Salzer's North Dakota and Compton's Early to northern Ontario.

2. The individual experiments show that no one variety of corn is well adapted to all parts of Ontario.

3. The variety of corn which will produce the largest total yield per acre and the largest yield of grain per acre among the varieties that will mature in any locality is one of the best corns for that locality.

4. The Cloud's Early Dent variety of corn has been tested over Ontario for four years in succession and has occupied first place in yield of whole crop in each of these years.

5. In average results of the experiment with corn in 1897, the three Dent varieties gave the largest average total yield per acre, and the two Flint corns gave the smallest total yield per acre. The one sweet variety held an intermediate position in this respect.

No. 4—Growing Three Leguminous Crops for Green Fodder.

1. Prepare for sowing all the packages of seeds upon three uniform plots, each plot being exactly two rods long by one rod wide.

2. Drive wooden stakes at the four corners of each plot and leave a clean path three feet wide between each two plots.

3. When the land becomes sufficiently warm in the spring run a strong cord around each plot and sow the different packages upon their respective plots and inside of the cord.

4. After the plants are up two or three inches run a cord around each plot and cut off every plant outside of the cord.

5. The Crimson clover should be cut as soon as the heads are well out, and the grass peas and the tares as soon as the pods are about one-half grown, and the green crop from each plot should be weighed immediately after being cut.

6. Feed the green crops separately to farm animals and take notice of which varieties are liked best.

Varieties.	Comparative value by experimenters.	Yield of grass crop per acre.
		tons.
Grass peas	100	9 9
Tares or Vetches	91	9 6
Crimson clover	52	8.1

As much interest has been taken in some of the fodder crops in the past, it was thought advisable to start an experiment with three leguminous crops in order to find out how they would do throughout the Province. This experiment was conducted in 1897 for the first time. The three varieties selected for the experiment were, grass peas, tares or vetches, and crimson clover. We received successful reports from eight carefully conducted experiments, the summary of which is given in the above table.

Conclusions.

1. The Grass peas produced the largest yield of green crop per acre and was also the most highly thought of by the experimenters in 1897.

2. Crimson Clover, regarding which we have recently heard so much, was not spoken highly of by those who grew it in 1897.

3. The Grass peas were the most and the Tares the least relished by the animals of these three varieties of fodder crops which were fed by the experimenters.

No. 5—Testing Three Mixtures of Grain for Green Fodder

1. Prepare for sowing the packages of seeds upon three uniform plots, each plot being exactly one rod square.

2. Drive wooden stakes at the four corners of each plot and leave a clean path three feet wide between each two plots.

3. Run a strong cord around each plot and sow the different packages upon their respective plots and inside the cord.

4. After the plants are up two or three inches, again run the cord around each plot and cut off every plant outside the cord.

5. The crops should be cut as soon as the heads are well out and the grain is in the milk stage and immediately weighed in the green condition.

Mixtures.	Comparative value by experimenters.		Yield of green crop per acre.	
	1896.	1897.	1896 13 tests.	1897 5 tests.
			tons.	tons.
Oats 1½ bus. per acre Peas ½ bus. per acre Tares ½ bus. per acre	91	88	7.3	15.7
Oats 1½ bus. per acre Peas 1 bus. per acre	100	100	7.4	13.7
Oats ½ bus. per acre Tares 1 bus. per acre	77	75	6.9	12.6

For two years in succession an experiment has been conducted throughout Ontario, by using three mixtures of grain for the production of green fodder, oats and peas forming one mixture; oats and tares another; oats, peas, and tares the third. The Siberian oats, Prussian blue peas, and the common tares or vetches were used for the experiment. The average yield per acre from each mixture for the year is given in the above table. The figures under the heading "Comparative value by experimenters" represent the estimate of these three mixtures by the experimenters, all things taken into consideration. The most popular mixture being represented by 100.

Conclusions.

1. Oats and peas produced the largest yield of green crop per acre in 1896, and oats, peas, and tares the largest yield in 1897.

2. Peas and oats formed the most popular mixture for green fodder in the experiments of 1896, and also of 1897.

3. One and one-half bushels of oats and one bushel of peas and tares combined make a very good mixture for the production of green fodder.

No. 6—Testing Four Varieties of Grasses for Hay.

1. Measure off four uniform plots, each one rod square, in a position that they may remain undisturbed for a number of years.

2. Drive wooden stakes at the four corners of each plot and have a clean path three feet wide between each two plots.

3. Run a strong cord around each plot and sow the different varieties upon their respective plots and inside of the cord.

4. Sow one-half pound of some kind of spring grain on each plot at the same time that the other seeds are sown, and then rake the ground well.

5. After the grain is up four inches, again run the cord around each plot, and cut off every plant outside of the cord.

6. Cut the grain when ripe, and remove it from the plots at once.

7. Again run a cord around each plot, and trim off the edges of the plot as evenly as possibe

8. Any weeds growing in the plots should be pulled out by hand or cut off by the spud.

Varieties.	Average height of plants about Oct. 10th.
	ins.
Meadow Fescue	14.8
Orchard grass	14.0
Tall oat grass	12.0
Timothy	8.3

Nearly two and a half million acres of Ontario land are devoted to the growing of grasses and clovers. Sixty-eight varieties of grasses and clovers have been tested in the experimental department at the College within the past ten years. As some of these varieties have proven themselves to be very hardy and produce large amounts of a fairly good quality of feed, it was thought advisable to send out some of the leading varieties of grasses in order that they might be tested on the different soils of the Province. Four varieties of grasses were thus distributed in the spring of 1897 for the first time. These were sown upon plots one rod square. Each experimenter was asked to have his plots so located that he could leave them undisturbed for several years. We hope, therefore, to obtain some valuable information after these plots have come through a few winters. At the end of the first season there is, of course, but little information to be obtained, and nothing is placed in the summary report given above except the average height of the different varieties of grasses on or about the 10th of October.

Conclusions.

1. The comparative results from the different varieties of grasses are very limited the first year.

2. Meadow fescue, orchard grass, and tall oat grass, each, grew to an average of one foot or more in height from the time the grain crop was harvested until the second week in October.

3. From present indications we hope to be able to report valuable results from this experiment in the future.

No. 7—Testing Four Varieties of Clovers for Hay.

1. Measure off four uniform plots, each one rod square, in a position that they may remain undisturbed for a number of years.

2. Drive wooden stakes at the four corners of each plot and leave a clean path three feet wide between each two plots.

3. Run a strong cord around each plot and sow the different varieties upon their respective plots and inside of the cord.

4. Sow one-half pound of some kind of spring grain on each plot at the same time that the other seeds are sown and then rake the ground well.

5. After the grain is up four inches, again run the cord around each plot, and cut off every plant outside of the cord.

6. Cut the grain when ripe, and remove it from the plots at once.

7. Again run a cord around each plot, and trim off the edges of the plot as evenly as possible.

8. Any weeds growing in the plots should be pulled out by hand or cut out by the spud.

Varieties.	Average height of plants about Oct. 10th.
	inches.
Mammoth Red	11.0
Lucerne	10.8
Common Red	9.5
Alsike	8.4

As in the case of the experiment with grasses, a test was conducted with four varieties of clovers over Ontario in 1897 for the first time. It was recommended to sow the four varieties of clovers with some kind of grain. It will, therefore, be seen that the growth of the clovers would be small during the first season. We have, therefore, included nothing in the above table except, as in the case of grasses, we give the average height of each variety of clover on or about October 10th. We hope to have valuable reports from this experiment in 1898.

Conclusions.

1. The comparative results from the different varieties of grasses are very limited the first year.

2. The grasses grew to a somewhat greater length than the clovers during the first season of this experiment.

3. From present indications we hope to be able to report valuable results from this experiment in the future.

No. 8—Testing Three Varieties of Buckwheat.

1. Prepare for sowing all the varieties upon three uniform plots, each plot being exactly one rod square.

2. Drive wooden stakes at the four corners of each plot and leave a clean path three feet wide between each two plots.

3. Run a strong cord around each plot and sow the different varieties upon their respective plots and inside of the cord.

4. After the plants are up two or three inches, again run the cord around each plot and cut off every plant outside of the cord.

5. The crops should be cut as soon as they ripen, and, when dry, weighed and threshed by flail immediately on being brought in from the heat of the sun, and then the grain should be weighed by itself.

Varieties.	Average height. 6 tests.	Yield of grain. 4 tests.
	inches.	bushels.
Japanese	36.5	29 2
Silver Hull	35.8	28 3
Common Grey	31.7	26 5

Three varieties of buckwheat were sent out over Ontario for co-operative experiments in 1897 for the first time. When we realize that upwards of one hundred and fifty thousand acres are devoted to this crop annually, it shows that it is one of considerable importance in this Province. The demand for this experiment was very great, and we have been unable to receive more than four satisfactory reports.

Conclusions.

1. In the co-operative experiments throughout Ontario, as well as in the experiments at the College, the Japanese variety of buckwheat came first; the Silver Hull second, and the common grey third in yield of grain per acre.

2, Each of the three varieties of buckwheat tested throughout Ontario in 1897 gave an average of upwards of 26 bushels per acre.

3. There is a difference of 2.7 bushels per acre between the average yield of the Japanese and the common grey varieties of buckwheat throughout Ontario in 1897.

No. 9—Testing Four Leading Varieties of Spring Wheat.

1. Prepare for sowing all the varieties upon four uniform plots, each plot being exactly one rod square.

2. Drive wooden stakes at the four corners of each plot and leave a clean path three feet wide between each two plots.

3. Run a strong cord around each plot and sow the different varieties upon their respective plots and inside of the cord

4. After the plants are up two or three inches, again run the cord around each plot and cut off every plant outside of the cord

5. The crops should be cut as soon as they ripen, and, when dry, weighed and threshed by flail immediately on being brought in from the heat of the sun, and then the grain should be weighed by itself.

Varieties.	Yield per acre, 31 tests.	
	Straw. (tons)	Grain. (bus.)
Spring Rye	1.99	24.3 (60 lbs.) 26.1 (56 lbs.)
Wild Goose	1.67	22 2
Herison Bearded	1.71	20.5
White Russian	1.59	19.1
Bart Tremenia	1.37	17.5

The demand for the spring wheat experiment was much larger in 1897 than it was in 1896; and in 1896 it was also considerably larger than in 1895. Owing to the big demand for spring wheat in the past season our supply of Bart Tremenia variety became exhausted before many of the applications were supplied. We, therefore, sent spring rye instead of the Bart Tremenia spring wheat to a number of the experimenters. We have summarized the results of the four varieties of spring wheat and the one variety of rye in the one table.

Conclusions.

1. Spring rye gave a larger yield of grain per acre than either of the four varieties of spring wheat in the co-operative experiments throughout Ontario in 1897.

2. The Herison Bearded variety of spring wheat gave the largest average yield of grain per acre in twenty-nine co-operative experiments in 1893; nineteen in 1894; thirteen in 1895 and eighteen in 1896; and gave the second largest average yield of grain per acre in thirty-one co-operative experiments in 1897.

3. The Wild Goose variety of spring wheat, which is a grain of inferior quality, gave the largest yield of the four varieties of spring wheat in 1897.

4. The Herison Bearded variety of spring wheat, which was imported from France in 1889, gave 1.4 bushels per acre more than the White Russian variety of spring wheat, which is so well known over Ontario.

5. The Herison Bearded is one of the best varieties of spring wheat tested at the Agricultural College for nine years in succession. It is a good yielder, weighs well, is liked by the millers, and gives general satisfaction.

No. 10—Testing Four Leading Varieties of Barley.

For instructions see Experiment No. 9.

Varieties.	Yield per acre, 20 tests.	
	Straw. (tons.)	Grain. (bus.)
Mandscheuri	1.44	38.9
Oderbrucker	1.23	31.4
Kinna Kulla	1.37	28.5
Black Hulless	1.25	29.4 (48 lbs.) 23.6 (60 lbs.)

Sixteen varities of barley have been tested over Ontario in connection with the Experimental Union work since the spring of 1892. The four varieties sent out in 1897 have all been tested in the Experimental Department at the College from eight to nine years in succession. The Mandscheuri was imported from Russia; the Oderbrucker from Germany; Kinna Kulla from Sweden; while the Black Hulless variety of barley has been grown in Ontario for many years. As forty-eight pounds is the standard weight per measured bushel of barley in Ontario, and as Hulless varieties usually weigh about sixty pounds, the results for the Black Hulless variety have been reckoned out by using each of these weights per measured bushel as indicated in the foregoing table. The Mandscheuri and Oderbrucker varieties of barley are six-rowed, the Kinna Kulla is a two-rowed variety, and the Black is a hulless variety.

Conclusions.

1. The Mandscheuri variety of barley has given the largest average yield of grain per acre in the comparative test for each of the years 1892, 1893, 1894, 1895, 1896, and 1897.

2. The six-rowed varieties of barley have surpassed the two-rowed and the Hulless varieties of yield per acre for six years in succession.

3. The Mandscheuri variety of barley was the most popular of the four kinds of barley tested over Ontario in 1897.

4. Although the Oderbrucker variety comes next to the Mandscheuri in yield of grain per acre in the co-operative experiments over Ontario and in the experiments at the College, still it will be seen that the Mandscheuri gave an average of 7½ bushels per acre more than the Oderbrucker in the co-operative experiments in 1897.

No. 11.—Testing Five Leading Varieties of Oats.

For instructions see Experiment No. 9.

Varieties.	Yield per acre, 86 tests.	
	Straw (tons).	Grain (bush.)
Oderbrucker	1.4	51.0
Siberian	1.5	48.9
Joanette	1 5	47.8
Bavarian	1.6	47.6
Poland White	1.5	46.4

When we realize that 2,432,491 acres were devoted to the growing of oats in 1897, we understand the great importance of finding out varieties which will give the best satisfaction on the soils of the Province. No less than 202 varieties of oats have been grown in the experimental grounds at the Agricultural College within the past ten years. Some of these varieties have done exceedingly well in the experiments at Guelph. They have also done well in the co operative experiments throughout Ontario. A few imported varieties take the lead in every instance. Within the past six years eleven varieties have been distributed for co-operative experiments throughout Ontario.

Conclusions.

1. The Siberian variety of Oats, which occupied second place in yield of grain per acre in 1897, and in 1896, gave the largest average yield in seventy-eight experiments conducted in 1895; one hundred and twenty-one experiments in 1894; one hundred and five experiments in 1893; and one hundred and twenty five experiments in 1892.

2. The Joannette, which stands third in the list for 1897, occupied third place in yield per acre in each of the years 1895, 1894, 1893, and 1892, and fourth place in 1896.

3. The Joannette Oats is the shortest strawed variety of oats among those used in this experiment, and is only suited for good rich land, and then it should be sown very thinly and early in the season.

4. The Oderbrucker, which has the highest average yield per acre for two years in succession, is somewhat weaker in the straw than the Siberian variety.

5. The Poland White, although producing the lowest amount of grain, is the earliest to mature and possesses a grain which weighs the heaviest per measured bushel of any of the varieties used in this experiment.

No. 12—Testing Four Leading Varieties of Peas.

For instructions see Experiment No. 9.

Varieties.	Yield per acre, 56 tests.	
	Straw (tons).	Grain (bush.)
Early Britain	1 2	23.8
Prussian Blue	1.4	22.7
White Wonder	1.1	22 5
Egyptian.	1 4	19.8

The White Wonder variety of peas, which was imported from New Zealand in 1890, was distributed for co-operative work in 1897 for the first time. The Early Britain variety of peas was imported from England in 1889 and distributed for co-operative experiments throughout Ontario in 1896 and in 1897. The Egyptian pea was brought from Egypt into the western part of Ontario some years ago. The character and growth of this variety is considerably different from that of our other varieties of peas, as the growth is upright and the plants are very branching and tree-like in form. There are numerous pods on each plant, but it is very seldom that a pod contains more than one pea. It has yielded well at the Agricultural College, but the straw seems to be of but little value. One special feature, however, is that it will usually stand up well even on rich low-lying land. The Prussian Blue variety has been grown over Ontario for several years and is well known in some localities.

Conclusions.

1. The Early Britain has given the largest average yield of grain per acre in the co-operative experiments over Ontario for two years in succession.

2. The Prussian Blue seems to be well suited for comparatively poor land; the Early Britain and the White Wonder for average quality of soil; and the Egyptian for rich land, which is apt to produce too much straw when sown with many of the varieties.

3. As there is a difference of four bushels per acre between the average yield of the highest and the lowest varieties in 1897, and as there were nearly nine hundred thousand acres of peas grown in Ontario during the past season, an increase of four bushels per acre on this area would mean a total increase of about 3,500,000 bushels of peas.

No. 13—Testing Three Varieties of Beans

1. Prepare for sowing all the varieties of beans upon three uniform plots, of exactly the same shape and size.

2. Each plot may consist of (*a*) eight rows sixteen feet six inches long; (*b*) for rows thirty-three feet long; (*c*) two rows sixty-six feet long.

3. The rows should be twenty-five inches apart.

4. Plant the beans six inches apart in the rows, thus using 264 beans of each variety.

5. When the young plants are about four inches tall, count the number on each plot, and, if necessary, pull a few plants in some of the plots in order to have exactly the same number of plants remaining of each variety.

6. The plants of each variety should be pulled and counted as soon as they ripen, and, when dry, threshed by flail immediately on being brought in from the heat of the sun, and the grain weighed.

As there is an annual acreage of about 50,000 acres of beans in Ontario, and as forty different varieties of beans have been tested in the Experimental Department at

the College, it was thought advisable to send a few varieties throughout Ontario for co-operative experiments in 1897. The three varieties thus distributed were California Pea bean, Small White Field bean, and the Marrowfat variety. Owing, however, to the unsatisfactory germination of the California Pea bean the results of this experiment are but little value for the past year. In fact the yields per acre from the co-operative experiments are not presented in the following table, but the comparative sizes of the beans, as determined by experimenters, are inserted; also the average results of the experiments of these three varieties for three years in succession at the Agricultural College are given.

Varieties.	Comparative size of beans, 6 tests.	Weight per bushel. 3 years. O. A. C.	Yield of grain per acre. 3 years. O. A. C.
		lbs.	bush.
California pea	61	64.8	18.7
Small white field	34	64.7	18.2
Marrowfat	100	63 6	10.2

Conclusions.

1. The beans of the Small White Field variety are only about one-half as large as those of the California Pea variety and only about one-third the size of the Marrowfat variety.

2. It is considered wise not to report the results of co-operative experiments unless the germination of the seed and other essential features are satisfactory in every respect.

3. Although the Marrowfat Peas are large and make an excellent appearance, still it will be seen that the California Pea bean has given an average of eight bushels per acre more than the Marrowfat in three years' experiments.

No. 14—Testing Five Leading Varieties of Carrots.

1. Prepare for sowing all the varieties upon five uniform plots, of exactly the same shape and size.

2. Each plot may consist of (*a*) eight drills, ten feet four inches long; or (*b*) four drills, ch rty-two feet eight inches long: or (*c*) two drills, sixty-five feet four inches long.

3. The drills should be twenty-five inches apart.

4. Sow all the seed of each variety as evenly as possible.

5. Thin out the oung plants in the drills to an average of four inches apai leaving 396 roots of each variety.

6. Again count the plants when about eight inches tall, and, if necessary, remove a few of the plants from some plots in order that the number of roots on the different plots will be exactly the same.

Varieties.	Comparative value by experimenters.	Average yield of roots per acre (tons), 29 tests.
Pearce's Improved Short White	100	24.8
Large White Vosges	76	22.5
Large White Belgian	58	21.4
Guerande	78	18.5
Danver's Orange	53	18.4

Eight varieties of carrots have been distributed throughout Ontario for co-operative experiments within the past six years. These have been selected from among fifty-six varieties grown in the Experimental Department at the College. Five varieties were included in the co-operative experiments in 1897.

Conclusions.

1. The Pearce's Improved Half Long White variety of carrots took the lead in point of yield in the co-operative experiments in 1896 and in 1897, and is very similar to the Steele's Improved Short White variety which took the lead in fifty per cent. of the experiments in 1892; in forty-two per cent in 1893; fifty-five per cent in 1894; and sixty-three per cent. in 1895.

2. The white fleshed varieties of carrots gave better yields of roots than the yellow fleshed varieties in 1893, 1894, 1895, 1896, and 1897.

3. The Guerande was the easiest to harvest and the Large White Belgian was the hardest, owing to the difficulty in removing the latter from the ground.

4. The Pearce's Improved Short White gave an average of 3.4 tons per acre more than the Large White Belgian variety which used to be grown quite extensively throughout Ontario.

No. 15—Testing Five Leading Varieties of Mangels.

1. Prepare for sowing all the varieties upon five uniform plots, of exactly the same shape and size.

2. Each plot may consist of (a) eight drills, 16 feet 4 inches long; or (b) four drills, 32 feet 8 inches long; or (c) two drills, 65 feet 4 inches long.

3. The drills should be twenty-five inches apart.

4. Sow all the seed of each variety as evenly as possible.

5. Thin out the young plants in the drills to an average of ten inches apart, leaving 158 roots of each variety.

6. Again count the plants when about eight inches tall, and, if necessary, remove a few of the plants from some plots in order that the number of roots on the different plots will be exactly the same.

Varieties.	Comparative value by experimenters.	Yield per acre, 32 tests.
		tons.
Evan's Improved Mammoth Saw-log	94	36.6
Simmer's Improved Long Red	92	36.6
Carter's Champion Yellow, intermediate	100	34.2
Carter's Warden Prize Orange Globe	73	26.9
White Silesian Sugar Beet	68	24.8

For experiment No. 15 two varieties of long red mangels, one variety of intermediate mangels, one of globe mangels, and one of sugar beets were used in 1897.

Conclusions.

1. The two red varieties of mangels gave larger yields per acre than the intermediate or globe varieties of mangels, and than the variety of sugar beets used in this experiment.

2. Although the Carter's Champion Yellow Intermediate variety of mangels gave 2.4 tons per acre less than either of the long red varieties, still it was the most popular variety tested by experimenters in 1897.

3. The White Silesian sugar beet gave 2.1 tons per acre less than the globe variety of mangels, and 11.8 tons per acre less than either of the long red varieties of mangels.

4. The sugar beets grew considerably under ground and required much more labor in harvesting than any of the varieties of mangels.

No. 16—Testing Four Leading Varieties of Turnips.

For instructions, see experiment No. 15.

Varieties.	Comparative value by experimenters.	Yield per acre, 8 tests.
		tons.
Purple Top Mammoth	86	36.1
Hartley's Bronze Top	100	28.2
Buckbee's Giant	93	27.4
Jersey Navet	61	27.0

One hundred and seventy-eight varieties of fall turnips have been tested in the Experimental Department from among those which have given good results. Four varieties were selected and sent out for co-operative experimental work in 1897. Two of these varieties belong to the Swedish class and two to the class usually known as fall turnips, or white and yellow-fleshed turnips. These four varieties of turnips were successfully tested on eight different farms.

Conclusions.

1. The fall turnips gave larger yields of roots per acre than Swede turnips in the co-operative tests in 1894, 1895, and 1896, while one of the varieties occupied that place in 1897.

2. The Jersey Navet variety of fall turnip, which usually does exceedingly well, did very poorly in the co-operative experiments in 1897.

3. The Hartley's Bronze Top Swede turnip was selected as the most valuable variety tested by various experimenters during the past year.

No. 17—Testing Six Leading Varieties of Potatoes.

1. Prepare for planting all the potatoes received, upon uniform plots of equal size.

2. One row sixty-six feet long is required for each variety. If the rows are placed side by side, a distance of thirty inches should be allowed between the rows.

3. First count the potatoes, and then cut them in such a way that there will be exactly sixty-six pieces of each variety.

4. Plant the pieces one foot apart in the row.

5. Count the number of hills of potatoes before digging the crop.

Varieties.	Table quality in autumn.	Percentage of crop marketable.	Yield per acre, 20 tests.
	100 best.		bush.
Pearl of Savoy	100	87	280.3
American Wonder	80	86	240.0
Empire State	88	88	239.7
Burpee's Extra Early	90	79	238.7
Tonhocks	83	81	233.5
Great Divide	70	78	220.8

Previous to the year 1894, co-operative experiments with potatoes were looked after by the Horticultural Committee. As the Committee on Agricultural Experiments was in a much better position to take charge of this work, and, as it was the desire of the director of the Horticultural Committee to carry on tests with varieties of small fruits, the experiments on potatoes were transferred from the Horticultural Committee to the Committee on Agricultural Experiments. Besides the six varieties mentioned in the foregoing table, the Summit, Rural New Yorker No. 2, White Star, Freeman, and the Irish Daisy varieties of potatoes have been tested in the co-operative experiments within the past four years.

CONCLUSIONS.

1. The Empire State variety, which occupied third place in 1897, gave the largest average yield of potatoes per acre in the co-operative experiments over Ontario in 1894, 1895, and 1896. It has also given the highest average yield of potatoes per acre among thirty-nine varieties grown at the Agricultural College for seven years in succession.

2. The Empire State, Pearl of Savoy, and American Wonder varieties produced the largest percentage of marketable potatoes, and the Great Divide and Burpee's Extra Early the smallest amount of marketable potatoes in the co-operative experiments of the past year.

3. The Pearl of Savoy, Burpee's Extra Early and the Empire State varieties were reported upon as possessing high table qualities and the Great Divide as being somewhat inferior in this respect.

4. The Burpee's extra Early and the Tonhocks varieties of potatoes were the first of the six varieties to reach maturity.

5. There is a difference of sixty bushels per acre between the average yield of the highest and the average yield of the lowest in the experiments of the past year.

No. 18—TESTING THREE LEADING VARIETIES OF WINTER WHEAT.

1. Select a portion of uniform soil and mark off three plots, each one square rod. Allow a path three feet wide between each two consecutive plots.

2. Drive stakes at the four corners of each plot.

3. Sow the respective varieties upon the different plots. It is an advantage to run a strong cord around each plot and sow inside the line.

4. After the grain is up three or four inches, again run the cord around each plot and cut off any plants that are outside of the line.

5. In harvesting the plots, watch carefully the requirements of the blank form on this page.

6. The crops should be cut as soon as they ripen, and, when dry, weighed and threshed by hail immediately on being brought in from the heat of the sun.

Varieties.	Yield per acre, 231 tests.	
	Straw. (Tons).	Grain. (Bush.)
Dawson's Golden Chaff	2.2	33.9
Stewart's Champion	2.4	33.7
Early Red Clawson	2.1	31.2
Pride of Genesee	2.2	31 0
Early Genesee Giant	2.1	30.6
Siberian	2.3	29.6
Poole	1.8	27.5

The results of the winter wheat experiments were sent to three hundred and fifty of the newspapers of Ontario in the autumn of 1897, between the time of harvesting and seeding. The seven varities of winter wheat which were sent out in the autumn of 1896 were divided into three sets, the Dawson's Golden Chaff being used in each set. By having one variety included in each set a basis of comparison was formed by which all the varieties could be compared with one another. The grain was sown at the rate of one and one-third bushels per acre upon plots exactly uniform in size and shape.

Conclusions.

1. In the average yield of winter wheat per acre, the Dawson's Golden Chaff stood highest among eleven varieties tested over Ontario in 1893, nine varieties in 1894, nine varieties in 1895, nine varieties in 1896, and seven in 1897, also among fifty-three varieties grown at the Agricultural College for six years in succession.

2. Three varieties of winter wheat have been tested over Ontario for four years in succession, with the following yields of grain per acre:—Dawson's Golden Chaff, thirty-two and a-half bushels; Early Red Clawson, twenty-nine and one-eighth bushels; and Early Genesee Giant, twenty-nine and one-twentieth bushels.

3. Dawson's Golden Chaff was the most popular variety with the experimenters in each of the past four years.

4. In the co-operative experiments for 1897, Stewart's Champion, Pride of Genesee, Dawson's Golden Chaff, and Siberian, made the best appearance in the spring.

5. Dawson's Golden Chaff and Early Genesee Giant possessed the strongest, and the Pride of Genesee and Siberian the weakest straw in 1897.

6. The Dawson's Golden Chaff and the Stewart's Champion were the least, and the Pride of Genesee and the Early Genesee Giant were the most affected by rust.

7. The Stewart's Champion and the Pride of Genesee produced the greatest length of straw.

8. The Early Red Clawson and the Dawson's Golden Chaff were the first to mature, and the Early Genesee Giant and the Stewart's Champion were the last to mature.

9. The Dawson's Golden Chaff and the Stewart's Champion produced the plumpest grain, and the Siberian and Poole the most shrunken grain.

10. The counties of Grey, Middlesex and Huron furnished the largest number of successful winter wheat reports in 1897.

SUCCESSFUL FARMING UNDER PRESENT CONDITIONS.

Addresses by a Number of Ex-Students.

Mr. C. A. Keil, Chatham: It affords me much pleasure to be present at this nineteenth Experimental Union meeting. I think this is the twelfth Union meeting I have attended. I feel I have always received an inspiration by coming here to meet my fellow students, students and officers. I was hoping that the other speakers on the pro-

gramme preceding me had been here to take their part that I might get a few pointers from what they had to say, but I am generally unfortunate in that way. Regarding the subject, I would say that the first essential is that we must be in love with our work. We must have faith in our country and in our calling. Hard work will never amount to anything, no matter in what calling it may be, unless we have some method in our work, and plan it properly. We must have push and perseverance. We must have an ideal and work up to that, and consequently be on the lookout for new methods and new ideas, and in fact for anything that will help us to increase our profits. Methods of farming adopted twenty years ago will not do now. We must get out of the ruts that our forefathers made and follow new methods. Years ago farmers made a success of their work with very little scientific knowledge. They had virgin soil to work on, but they left the farms in a great many cases in an impoverished condition for those who followed them. We must now keep the land in better shape. We must gain knowledge in every way we can. I think we should read the best agricultural journals that can be had. We have several of them in this Province to-day. There is another feature that I wish to refer to, and that is in connection with the work which Mr. Zavitz has charge of. Instead of growing fifteen or twenty bushels of wheat to the acre, why not grow thirty or forty bushels to the acre? The same with oats, barley and all other grains. I wish to say just here that I have been farming for myself for nine years. I believe I have been, to a certain measure, successful. I have never had less than fifty bushels of oats per acre, sometimes sixty to seventy, and so on with the other crops. If we can increase our yields it means a great deal for us. It means a great deal for the Province. Prof. James told us last night that the wheat crop of Ontario was worth more than all the gold and other minerals mined in the Province this year. If we can increase the average yield five or ten bushels to the acre, it certainly means a great deal. We must look after the details on the farm. I notice a great many farmers neglect caring for stock and caring for implements. There is an enormous waste going on all over this Province through a lack of proper care of animals, etc. Great care should be exercised in regard to the purchase of new implements. There are always men who are ready to but any new thing that comes along, and perhaps cannot use it after they get it. The main thing is to take proper care of whatever implements we have. We should keep nothing but the very best of everything, whether in live stock, grain growing, or poultry. We should keep nothing but the best breeds and sow nothing but the best varieties. It is a great mistake and a waste of time and money to keep surplus stock. I think the sooner we awaken to this fact the better for us. We would get better results by keeping a good class of stock and by growing the superior varieties of crops. My firm belief is that mixed farming is best for this Province at the present time. It is the safest. Although we know that there are men who have been following special lines, and have been fairly successful, yet I think for the average farmer of to-day, mixed farming is the safest. I think a little farm well tilled is more profitable than a large one run over. Thoroughly cultivate your land and make the best of everything.

T. Lloyd-Jones, Brantford: I consider this a great honor to be called upon to address such an important meeting upon such an important subject. It is a subject that is being discussed by every farmer to-day. It is a problem that this Agricultural College is trying to solve for the benefit of students who are here in such large numbers this year. I hope, and we all know in fact that the students, after leaving college and going out into the country will help the farmers there to solve this problem. Years ago when men could plow the ground, sow the seed, and reap a large crop, there was not so much difficulty in farming, but to-day when the soil is partially exhausted, as Mr. Reynolds told you this morning, because of a lack of humus, a bountiful harvest is not easily secured. A person needs knowledge to retain and increase the humus in the soil. Therefore, I think that the first and most important feature of farming is a proper knowledge of how to handle the soil to conserve the soil moisture and to conserve plant food that is already in the soil. The success in farming depends largely upon attention given to this matter.

W. W. Cooper, Kippen: It has been a great pleasure to me to be present at the Union meeting. I have attended a few meetings in connection with the Union since leaving here and have thought very much of them. There has been a number of features outlined by those who came before me. I am going to state two other features. In contrasting people of the old country with people of America, or "Westerners," as we are sometimes called, a writer has made this reference. "People of the old country who are engaged in farming make a specialty of some one thing. America, on the other hand, is full of persons who can do many things, but do no one thing well. The secret of their failure is mental dissipation." This writer, I believe, has laid his finger on the weakness of our western life. I think this is a very important feature in connection with our calling. Although mixed farming is advocated, and I would advocate it to a certain degree, at the same time we should be very guarded in this. We should specialize. We divide our attention among too many things. The English people give attention to one thing and make a success of it. This is their stronghold. Even though our work be varied we should give prominence to some one feature of it.

G. A. Brodie, Bethesda: I have not had many privileges of coming before audiences in the past, and I am sure I do not pretend to bring much important matter before you this afternoon, I can only give a review of that which you know. The rapid development of science and the improved railway facilities during the last quarter of a century have brought us into keenest competition with the greater part of the world in supplying the various markets. We cannot expect to produce hogs as cheaply as can be done in some of the large corn-growing states. Neither can we expect to produce certain crops as cheaply as they can be produced on the rich lands of the Northwest, the fertile plains of Russia and India, or the rich fields of the Argentine Republic. Much, however, lies within our power to produce the best quality in every line. In this climate of ours, with all the conditions of this country, we can produce the best quality and a larger quantity per given area. Our Government, of course, can do much in the opening up of new markets and gaining access to these markets, but the great question lies within ourselves, in lessening the cost of production. A subject which at the present time gets more attention than any other question relative to farming. We must produce only the gilt-edged article. The great point then is to produce the largest quantity of the best quality, and at the lowest possible expense, and to do this we must have a thorough knowledge of the best modes of farming. We must understand the conditions that underlie the management of the soil, and its physical and chemical conditions. We also need to understand the growth and habits of plants, and the relationship of the soil with plant life, that we may be able to produce the largest quantity of the best quality for our stock. Then we must understand our animals, not only the feeding of the animals, but the effect different foods have upon them. We must remember that everything that tends to the development of live stock will also add to the profits at the close of the year. Then we should have a thorough knowledge of farm management, which has already been mentioned. Just a sufficient amount of hired help should be kept to run the farm. Then there is the care of implements. How often we see through the country implements in the fence corner where they have been left. We cannot afford under the present conditions to allow implements to stay in the fields when they can be easily sheltered at a small expense. There is another point which should be mentioned in connection with successful agriculture. This is the securing of a suitable partner. I think that each one should know about this. All will have a partner at some time it is hoped. Very often, if the advice of the woman is followed it is worth considerable to the man. In conclusion I wish to draw attention to the importance of gilt-edge product for the market. The care of the little things in every department around the farm is essential to successful farming.

J. A. Campbell, Simcoe: Our soil may be said to be naturally fertile, well watered, and our Province is favorably situated, although probably too far north for the production of the ordinary farm crops at the lowest possible cost. Our people are intelligent and industrious. Our soil, though naturally fertile, is somewhat exhausted for grain-growing, and the price during the last few years has been so low as to yield but little profit on both labor and capital employed.

The age is marked by the wonderful progress being made and by the great influence exercised by the monetary institutions, and the tendency of these to forward their own interests and exert an influence over even the legislation of the country. The rapid development of means of transportation may be noted under which trade and commerce is carried on all over the world, and the large tracts of new country adapted to the growth of cereals is opened up. We now compete with the great trading nations of the world. Many of the farm crops have been sold at a price that was less than the cost of production. In every walk of life competition is becoming more keenly felt. Farmers must lessen the cost of production, and improve the quality of their crops. Now, if we were to refer to the ways in which our energies should be directed under the circumstances, I think the first place should be given to the facilities afforded the farming community for acquiring a thorough knowledge of their business. The facilities of the educational system of the country along with the various associations for the promotion of agriculture are all doing excellent work in their various departments, and are becoming of great aid to the farmer. I agree with Dr. Mills on the excellent work your are doing at this College, and its wide range of usefulness. I look upon this institution as destined to play a very important part in the promotion of agriculture. After all, this institution is only in its infancy. As Dr. Mills said last night, we cannot stand still. I have always held to the opinion that probably a mistake was made in commencing to build from the top rather than from the bottom. I always held to the view that an agricultural course should be taught in the high schools, whether for the benefit of those who intend to farm, or for the preparation of teachers to take charge in country schools. I think the time has arrived when something must be done.

The most important features in connection with farm life during the last century have been the rapid development of the cheese industry—the cheese sales being the most important in the farmers output. In this, I think, we have a clue to the successful farming of the future. It is the product of the finished article, of high quality, rather than the production of the raw material that should claim our attention. I think in countries situated such as ours, grain growing is always the most primitive kind of agriculture. The greater the skill, the larger will be the profits secured. There is a great necessity of a better banking system to meet the wants of the farmers. This has not received the slightest attention, and it is very remarkable when we remember the tremendous excitement caused by the subject on the other side of the line a few years ago. It was true that the money was scarce in the Western States, because it could not be secured by the business men. There was abundance of money in the vaults or pockets of the people. The real trouble was the faulty system of banking money and the lack of confidence of the people themselves. Our banking system is considered to be based upon that of Scotland. We have in this country all the elements that go to make a sound banking system. We have gold on which it must be based. We have scattered throughout the country intelligent farmers, but what we lack is business enterprise.

I shall now touch upon another important matter—I refer to the cold storage system and deep water route to the sea. I have wondered why farmers do dot take an interest in this question. I think the time has arrived when a deep water route to the sea should be undertaken at once. If I understand things properly, at the present time that work should be undertaken regardless of cost. I think this matter of some little importance in connection with this subject. Farmers should give a hearty support to all co-operative movements, under whatever name they may be known. I think farmers should give attention and study to political science and economic questions. We should try and gain a knowledge of the science of government. This should be of interest to the students. When you have completed your course here, and engage in farming, you are somewhat indebted to the country. By imparting some knowledge along the lines I have mentioned you will at least do something to forward the interests of Canadian farmers.

D. P. L. Campbell, Vankleek Hill: Little did I imagine when speeding eastward on the train in 1880, as the O. A. C. was lost to view in the distance, that seventeen years would elapse before I should again meet with many of the friends whose acquaint-

ance had been made during the pleasant months spent there. But such is the case. Although unable to be present at this meeting, I heartily join in the hope that the Experimental Union meeting of the 9th and 10th December, 1897, may be a success in every respect. Being unable to give the five-minute address in person, as the representative of the ex-students of 1880, the next best thing to do is to commit a few ideas to paper. In thinking over the subject, the question at once presents itself: What can be said or written that has not been said or written already? A man may imagine he has evolved something new, when he finds that some one else has preceded him. However, every man should have an individuality of his own—his own way of thinking, his own way of expressing. His ideas may at least be suggestive. The first point I would state is, to endeavor to have some effort tell. Some time ago there was sickness in my neighbor's family. I went over to water his cattle, and having worked vigorously at the pump handle, succeeded in raising the water to the spout; but by this time I was puffing like a tug-boat and waited a few seconds to draw breath, and on looking down I found the water had leaked out of the pump head down to the level of the platform, so the operation of working the handle still more vigorously than before had to be performed, and finally a small stream emerged from the spout as a reward. But I was already sick, too—that is of the job of trying to get enough water out of the pump to water those cows. Now, I am not lazy, but am rather fond of hard work; but, gentlemen, to use that pump in that condition I simply would not do it—no, not if it were to please my grandmother. However, I succeeded in stuffing some strips of cloth into the cracks from which the water was leaking, and then tried again. What a difference! Now the water flows freely from the spout and the effort tells every time.

There are principles in the foregoing that I shall try and apply in a few ways. For instance, the soil of the greater number of farms in the older sections of the country is not so fertile or so productive as formerly and consequently requires to be fertilized How is this to be done? One way is to save the voidings of animals. Is this done? What about the liquid portion? Is it soaking away into the ground? If so, stop that leak, and the effort will tell by increasing the succeeding crops. Do weeds of various kinds grow unchecked, and, like so many robbers, appropriate the wealth of the soil to themselves? If so, destroy them, and the effort will tell. During the growing season, is water to be found lying on the surface of the fields? If so, drain the land and the effort will tell. Cultivate thoroughly and have the land in good condition to receive the seed, and the effort will tell. Some farmers will ask, "Do you sow your peas in the moon?" They claim that if you do not you will not have a crop worth anything. Well, for my own part, I would rather sow my peas in a few acres of well prepared Glengarry soil than in the largest moon of the season. If you are a dairyman, test your cows, and every animal that does not show a balance to her credit at the end of the season get rid her and have the place filled with one that will, and the effort will tell. Ascertain what crops the farm will produce most profitably, and devote your energies to supply the need. When marketing your produce, endeavor to deal as directly with the consumers as possible and thus save the profits of the middle men.

G. S. Henry, B.A., Toronto: I wish to make a few remarks on the question of education. Farmers should get out of the old track, and one way to accomplish this is by a liberal education. I am sorry to hear Dr. Goldwin Smith say that all the boys were going to the Universities and into professions. Why should they not go into farming which is one of the most important professions. I think it is a mistake not to call it a profession. I think it is a mistake to think that a man cannot go to a University and afterwards become a successful farmer. There are many ways in the country life that can be made very attractive. A person taking a course in a University can help those on the farm to a marked degree. He can inspire in them a love for studying and a love of enjoyment of one kind or another which will make them more contented on the farm. A great many leave because they do not get sufficient education to make them satisfied on the farm. They can live just as happily there as in the city. I think there

is a vast scope for men of this class. I think it is a mistake to say that a man should not go to the University and then go into farming afterwards. If you will pardon a personal reference, I will say that I have had the honor and privilege of becoming a graduate of a University. I always did intend to go on the farm. I was laughed at when I came here last winter. Some thought I was here to have a good time. They thought it was impossible for me to go on a farm. I think we should do what we can to stop this trend of thought.

G. C. CREELMAN, Cobourg: I did not intend to say anything on this subject, as I said my little speech last night. However, I rise to my feet to make a few remarks. In the first place, I wish to refer to Mr. Brodie's speech. Mr. Brodie is a family man. I notice that one of the things he looked after on the farm was to get a good partner. The next thing to look after was the little things. I supposed a good partner would help to look after those herself. Being now engaged in the insurance business, I come across printed proceedings of meetings of insurance inspectors and medical men who are interested in the work of insurance. In a list of what they considered the best risks for life insurance, I was very much surprised to find that they placed the farmer very low on the list. We hear at all times the claim made that his profession is the most independent of all and the healthiest. I have heard that since I was large enough to hear. Entering into discussion with a physician, he explained why he considered farmers not as good risks as others. He said:

1. That the farmer paid too little attention to the sanitary conditions of the house. They had low rooms without half enough air.

2. Their rooms are very poorly ventilated; the windows are low and small, and often placed directly opposite to the door; when open there was a draft; when closed no good means of ventilation could be had.

3. In many cases the farm building were situated too close to the house. Nearly all cases of fever, especially of typhoid fever could be traced to the influence of streams coming from the stables. In case of sickness the patient was frequently put into the smallest room, and the room off the kitchen where it was supposed to be the warmest. In this way they select the poorest room in the house. It would be better to go upstairs. By putting the patient in the little room off the kitchen the disease would have the very best chance of killing the farmer. The house is often too small. There are sometimes two or three in the same room, and frequently in the same bed. People that live in the city or town although they have rent to pay, never think of crowding.

Farmers should have some sort of enjoyment to change the routine of life, and break the monotony. Monotony was one of the conditions under which even healthy people did not thrive well. There should be enjoyment on the farm in the evening. Especially those who have been at the College where they have seen things as they should be, should look into the sanitary conditions of their own homes very carefully. We know how to tile drain our land and how to ventilate our buildings properly. The outer buildings should be a good distance from the house. Some farmers in the Southern States are going to the trouble of putting up a covered roof from the barn to the house before they will put up with the unhealthy condition of the farm house by its being situated close to the stable

W. R. BISHOP, Brockville: I have been very much interested in the discussion this afternoon. We have had a great many important points brought out. I have been around several parts of the Province for quite a number of years, and I have been very much impressed with the general attitude of the farmers. They seem to be very careless about knowing anything of the principles that underlie their calling. I have very often thought that it was a wonder they kept alive with so little knowledge and so much carelessness as they seem to possess. Our forefathers after clearing up their land had virgin soil. They had to have virgin soil because they did not have time to acquire skill. It was well that they had to do nothing but sow and harvest and have a tolerably fair crop. They have not impressed upon their sons the necessity of doing anything else, but simply to plow, sow, and harvest. This is the reason that our soil has been impoveri hed

The young men of the rising generation do not seem to possess skill, nor do they seem to care to acquire skill and knowledge necessary to make a proper living under the present circumstances. This is one of the principal reasons for the high opinion I have of this College: It gives the students a knowledge of the underlying principles of their calling. Many of the young men on farms are disposed to dissipation, which has the very worst effect upon the young people of the country. The two things that should be impressed on the young people of to-day are, the need of acquirement of skill and the evil effects of dissipation.

TREASURER'S REPORT FOR 1897.

Receipts.		Expenditures.	
Balance from 1896	$99 03	Agricultural experiments	$676 60
Membership fees	58 00	Horticultural experiments	130 95
Government grant	1,200 00	Dairy experiments	11 00
		Part expenses annual meeting, 1896	44 50
		Part expenses annual meeting, 1897	75 25
		Meeting of executive	11 55
		Salary of editor and secretary	105 00
		Total expenditure	$1,054 85
		Balance on hand	302 18
Total	$1,357 03	Total	$1,357 03

We, the undersigned Auditors of the Ontario Agricultural and Experimental Union, beg leave to say that we have examined the accounts of the Treasurer and find them to be correct.

Agricultural College,
December, 9th, 1897.

Allen Shantz, } Auditors.
W. J. Elliott, }

EXPERIMENTS IN FOUL BROOD IN 1897.

The committee on apicultural experimental work continued the investigation of foul brood in bees during 1897. Mr. F. C. Harrison, Bacteriologist, Agricultural College, Guelph, conducted these investigations and reported the summary results at the meeting.

CO-OPERATIVE DAIRY EXPERIMENTS.

Prepared by Prof. H. H. Dean, and Presented by T. C. Rogers.

The committee appointed by the Union to plan and conduct experiments in dairying for 1897, beg leave to report as follows:

Early in the spring a similar circular letter to that sent last year was mailed to about 150 butter and cheese makers throughout Ontario. Blanks were also sent for conducting experiments the same as last year—three for cheese making and three for butter-

making. Only three experiments in butter making were reported on. Several wrote saying that they fully intended conducting some experiments but the season was such a busy one they were unable to do so. One who conducted experiments writes: I find one is enabled to gain valuable experience by conducting various experiments along the lines you have directed I trust that in the near future our calling will be brought to a science, and that we may become united in our efforts to raise the standard of dairymen and dairying.

While most of the makers are convinced of the value of these experiments, they are so busy that it is difficult to induce them to spare any time for accurate experimenting, and it seems as if this work must be largely done in experimental dairy stations where special men and appliances may be used for the work.

Messrs. McFeeters and Stonehouse conducted experiments and are entitled to the premiums offered by the committee.

In addition to the experimental blanks, suitable blanks with questions relating to butter and cheese making were sent to a number of makers. The names of those responding, together with a summary of their answers to the various questions are as follows:

Buttermakers who sent in Reports: William Campbell, Cannamore; J. A. McFeeters, (Flower Farm) Cobourg; A. E. Howey, (Regina, Assa.) Oxford Mills; E. Gillespie, Crosshill.

Cheesemakers who sent in Reports: J. W. Copeland, Avon Bank; W. J. Elliott, (Watt) Beatrice; Henry Hicks, Palermo; Robert Stillman, Blackstock; Jno. S. Gibson, Dundalk; D. W. McEwen, (Jockvale No. 2), Maxville; Arnold Aldrich, Cheapside.

Summary of Answers from Cheesemakers.

Question.—What are the chief faults in milk delivered at your factory?

Answer.—Not strained, lack of aeration, cans not washed properly, cowy, stable and weedy flavors.

Q.—Do you advocate straining and aerating of milk?

A.—Yes; strain and aerate with dipper. Aerators not kept clean.

Q.—Do your patrons cool milk in water; if so do you approve of it?

A.—Many patrons cool their milk especially in hot weather. It is approved of in hot weather if well aerated first.

Q.—What system of dividing proceeds have you adopted?

A.—Some divide according to the weight of milk, some according to the butter fat, and some according to the percentage of butter fat plus two.

Q.—How often do you test each patron's milk?

A.—When paying according to the butter fat, testing is done twice per month, but when according to the weight of milk, testing from once a month to two or three times a season is the common practice.

Q.—What is the highest, lowest and average percentage of fat in patrons' milk?

A.—Highest 5.4, lowest 2.7, average 3.6

Q.—What quantity of rennet do you use?

A.—From 2½ to 3½ ounces per 1,000 lbs. of milk.

Q.—Do you favor the use of a "starter;" if so, how is it prepared and how much is used?

A.—Majority favor using about half of one per cent. "starter" in cold weather when the milk is sweet. Whole milk is used, and it is allowed to ripen after heating to 90 degrees. Some add one-third to one-half water. One man pasteurized his milk.

Q.—At what temperature do you set the milk?

A.—Rennet is added to the milk at a temperature of 86°. One maker sets at 88°.

Q.—To what temperature do you heat for cooking the curds?

A.—All cook at 98°, except one, who heats to 100°.

Q.—How long are curds allowed to remain in the whey?

A.—From 2¼ to 3 hours—average 2¾ hours.

Q.—What test is used for dipping a curd?

A.—The hot iron.

Q.—How long after dipping do you mill the curd?

A.—From 1¼ to 3 hours. (There seems to be a wide difference in makers' methods on this point.)

Q.—What kind of a curd mill do you use?

A.—All use knife mills.

Q.—What per cent. of fat do you find in the whey?

A.—From a "trace" to two-tenths of one per cent.

Q.—How long after milling before you salt the curd?

A.—From 1 hour to 2½ hours—average about 2 hours.

Q.—How much salt is used on the curd?

A.—Majority use 2 to 2½ lbs. per 1,000 lbs. milk. One used 3¾ lbs.

Q.—How long after salting before you put to press?

A.—Fifteen to thirty minutes—average, about twenty.

Q.—At what temperature do you put to press?

A.—From 80° to 86°.

Q.—How long after putting to press do you bandage the cheese.

A.—One-half hour to one hour—average, 45 minutes.

Q.—Do you use upright or gang press? Which do you prefer?

A.—The majority use and prefer the gang press.

Q.—Do you turn cheese in the press in the morning?

A.—All do, except one maker.

Q.—How long do you leave cheese in the press?

A.—Fifteen to twenty-two hours—average, twenty hours.

Q.—Do you mark date, number, or any brand on your cheese?

A.—All mark date of making, and four brand the word "Canada" on the cheese.

Q.—At what temperature do you aim to keep the curing room?

A.—From 60° to 70°.

Q.—What amount of moisture do you have in curing room?

A.—Only one maker (graduate of Dairy School) has a hygrometer, and he aims to keep 65 per cent. of moisture in curing room.

Q.—How long are cheese held before shipping?

A.—From two to four weeks.

Q.—What was your highest, lowest, and average price for season?

A.—7¼ to 10 cents per pound.

Q.—What price per pound of cheese is charged for making?

A.—1½ to 2⅜ cents, including the hauling of the milk.

Q.—What price per 100 lbs. cheese is paid to the maker?

A.—From 70 to 90 cents.

Q.—What price is paid per 100 lbs. of milk for hauling?

A.—Seven to ten cents.

Q.—Has the season been a successful one?

A.—All report a successful season.

Q.—What improvements would you suggest?

A.—"Strict attention to the aeration of the milk, and cleanliness in milking." "That ice be kept at factory, or that a stone cellar be placed under the factory to store cheese in during hot weather." "Better ventilation in curing room and a supply of ice to keep temperature down in hot weather." "Reduce expenses, by getting more milk, by lessening the cost of hauling," etc. "Dividing proceeds among patrons according to the percentage of fat."

SUMMARY OF ANSWERS FROM BUTTERMAKERS.

Q.—What are the chief faults to be found with the milk or cream, delivered at your creamery?

A.—Stable flavor, dirty milk, over-ripe milk, partially churned milk, cream not rich enough in butter fat where it is raised by the deep-setting method.

Q.—At what temperature do you separate milk?

A.—From 90° to 106°.

Q.—How do you beat the milk?

A.—With ejector, and with channel vat heated underneath.

Q.—Do you consider separator cream superior to deep-setting cream?

A.—Yes.

Q.—How do you cool your cream?

A.—By ice water surrounding the vat, by cream can placed in ice water, by allowing water to flow around the cream vat, and by placing a tin with ice in it into the cream.

Q.—What percentage of fat do you find in the cream?

A.—Separator cream 32 to 36 per cent.

Q.—What percentage of fat do you find in skim-milk?

A.—From a "trace" to one-tenth of one per cent.

Q.—What percentage of fat do you find in buttermilk?

A.—From a "trace" to two-tenths of one per cent.

Q.—Do you test buttermilk and skim-milk daily?

A.—One maker tests buttermilk daily and the others test occasionally.

Q.—How do you ripen your cream?

A.—"Use a starter of sour milk or buttermilk." "Cool to 65° or 70°, add pasteurized starter (one man uses cream) and allow to stand until thick." "Allow gathered cream to stand for 24 hours at 60 degrees."

Q.—What per cent. of starter do you use?

A.—From five to ten per cent.

Q.—How long do you take to ripen the cream?

A.—"Cool to 50°, then heat to 60° and ripen for 24 hours." "From 5 to 8 hours after adding starter the cream is thick, at 65° to 70°."

Q.—What is your test to know when cream is ripe enough for churning?

A.—By tasting and smelling cream. One maker (graduate of Dairy School) uses the alkali test and has five to six-tenths per cent. acid.

Q.—At what temperature do you churn?

A.—48° to 65°. (Low temperature is separator cream and the high temperature is gathered cream.)

Q.—How long is cream at churning temperature before it is churned?

A.—From 10 hours (separator cream) to 24 hours (gathered cream).

Q.—How long do you take for churning?

A.—From 30 to 50 minutes (separator) and 30 to 60 minutes (gathered cream).

Q.—Do you wash your butter?

A.—All wash once (separator) or twice (gathered cream).

Q.—What quantity of salt do you use?

A.—One-quarter to one ounce per pound of butter.

Q.—Do you work butter once or twice?

A.—One works twice, the others once.

Q.—What kind of package do you prefer?

A.—Square box (56 pounds) for export and pound prints for local trade.

Q.—How long is butter held before shipping?

A.—One week to four weeks.

Q.—At what temperature is butter held in storage?

A.—One man reports 32 degrees. (No answer from the others.)

Q.—What price is charged for making butter?

A.—From three and a half to four cents.

Q.—What price is charged for hauling?

A.—Patrons deliver their milk in separator creameries, or about one cent per pound of butter is charged in cream-gathered creamers.

Q.—What price was paid to patrons per pound of butter?

A.—Fifteen and a half cents for winter creamery, and fourteen cents for summer.

Q.—Has the season been successful?

A.—Yes.

Q.—What improvements would you suggest?

A.—Better buildings; cold storage in creameries; patrons use a hand or power separator instead of setting the milk.

Washing Butter.

Experiments were conducted by Messrs. Jas. Stonehouse, of the Eden creamery, Beaverton, and J. A. McFeeters, of Cobourg.

The results of their experiments are as follows: Mr. Stonehouse sent the three tubs of butter—unwashed, washed once, and washed twice—to D. Gunn Bros & Co., of Toronto, to be scored, which they kindly consented to do. Their scoring is seen in the table of results. In a letter dated December 2nd they say: "We sold the tub which was washed once, and to-day we examined the others, and found that the unwashed has kept the best—in fact, the flavor is much better; other conditions unchanged. The color in the unwashed has always been a little off, as it had a mottled appearance."

EFFECT ON QUALITY OF BUTTER WHEN CREAM IS COOLED TO A TEMPERATURE OF FIFTY DEGREES, OR BELOW, AFTER SEPARATING.

Unwashed.		Score. Three days after making.	Score. Two weeks.	Score. One month.
Flavor	45	45	44	42
Grain	15	14½	14½	14
Body and texture	15	14½	14½	14
Color	15	12	11	11
Salt	10	9	9	9
Total	100	95	93	90
Washed once.				
Flavor	45	44	43	40
Grain	15	14½	14½	14
Body and texture	15	14½	14½	14
Color	15	13	13	12
Salt	10	8	8	8½
Total	100	94	93	88½
Washed twice.				
Flavor	45	44	42	41
Grain	15	14	14	14
Body and texture	15	14	14	14
Color	15	14	14	13
Salt	10	10	10	10
Total	100	96	94	92

I have made a number of tests as above, and have concluded that I can get as firm butter from cream 24 hours old which had from 15 to 20 per cent. of starter added and ripened at 65 degrees and cooled down to churning temperature (52 degrees) from ten to twelve hours before churning, as I can from cream cooled to 45 degrees immediately after separating and held for 48 hours before churning. From 27 to 30 per cent. of fat in the cream gives the best results in skimming and churning.

JAMES STONEHOUSE.

CREAMING MILK BY SHALLOW PAN, DEEP SETTING WITH ICE, AND SEPARATOR METHODS.

Method of Creaming.	Date.	Lbs. of Milk used.	Per cent. of fat in			Minutes required to churn.	Lbs. of butter.
			Whole milk.	Skim milk.	Butter-milk.		
Shallow pan	May	300	3.8	.8	.1	30	12.
Deep setting	May	300	3.8	.5	.2	20	12.
Separator	May	300	3.8	.1	Trace.	45	13.
Shallow pan	June	350	4.	.6	.2	35	15.3
Deep setting	June	350	4.	.7	.2	30	15.
Separator	June	350	4.	.1	.1	45	16.
Shallow pan	July	400	4.	.9	.1	40	17.
Deep setting	July	400	4.	.7	.2	30	17.3
Separator	July	400	4.	.1	Trace.	45	18.
Shallow pan	August.	360	4.2	.6	.1	35	15.
Deep setting	August.	360	4.2	.4	.1	40	15.8
Separator	August.	360	4.2	.1	Trace.	45	16.8

We became convinced that the separator was by far the more preferable mode of creaming, so omitted to conduct further experiments.

J. A. McFeeters.

Effect on Quality of Butter when Cream is cooled to a Temperature of Fifty Degrees, or below, after Separating.

In our experiments along this line we concluded that the results were more satisfactory when we ripened at 70° without cooling down.

The butter scored higher in *flavor* and was equally as good in texture and body. I am decidedly in favor of ripening at a high temperature and cooling down after.

From 30 to 35 per cent. of fat in the cream gives exhaustive churning. We feed separator at about two third rate of capacity given by manufacturers, thus we are enabled to secure thick cream.

Mr. S. P. Brown, Birnam : The experimental work in dairying seems to be somewhat backward, but we have at last got a little work started. I think we will be able to accomplish more. An important feature both in butter and cheese making is the care of the milk that we receive at our factories. We should encourage our patrons to care for the milk in a better way from the time it is drawn from the cow until it reaches the factory. In the first place, in drawing the milk from the cow too many are careless in the manner of ridding the cow's udder of dust, loose hairs, and so on, that may be there to drop into the pail. The next thing is the straining. If some of the farmers who do take care of their milk could see the immense quantity of filth that comes into the factory during the reception of some ten to fifteen thousand pounds of milk in the morning they would be surprised. Yould would wonder how anything fit to eat could be manufactured from it, and that is one of the great features that we must overcome. It seems to me we must impress this upon the people who produce the milk. It is necessary to have the milk delivered at the factory in first-class condition in order to get a first-class product. To rid milk of any odors that it may possess—animal odors or taints from food or any thing of that sort—is a very important feature. A person may strain milk and all that sort of thing, but that will not do it all. The food that the animals eat, and the water that the animals drink have a marked influence on the milk. You may think it clear so far as the eye can detect, but it may still contain dirt. The cows often drink from filthy holes in the pasture field or eat weeds. Anything of that sort gives a bad flavor to the butter or cheese. It seems to me that one of the chief features that we should bring out here is the importance of ærating all the milk. You notice in the reports that both seem to condemn the aerators. Aerators should play a good part in the care of milk. There is a little too much carelessness on the part of some in looking after these ; and many instruments that have been on the market up to the present time have been constructed so that they are not easily cleaned, and that is the principal objection to the aerators. Some are being put on the market at the present time that are doing good work, and I think they are excellent utensils for the dairies, but the dipper is one of the best and most easily manipulated of any of them. While the aerator will do good work, still at the same time the dipper is more effectual. The first half hour after the milk is drawn from the cow, when it is at the normal temperature, is the proper time to aerate the milk. Fifteen minutes with a dipper at this period will do more for the preservation of that milk, for the production of a first-class article, than putting it through an aerator.

The next important feature is in the cooling of it. If I could be positive that all the milk delivered at my factory was dipped for fifteen minutes in good pure air, I would prefer to have that than to have the freshly-drawn milk put into ice cold water and allowed to stand in that water without access to pure air. You may have strained the milk and you may have handled it carefully, still if the animals have been feverish or if they have had bad weeds or bad water, the milk will be greatly influenced thereby.

The use of starters is being practised in many factories with good results. While there are a great many objections to the starter in cheesemaking, yet, if used judiciously, it is a good feature, but if a maker gets in a hurry and uses too much starter, he will find some injurious effects on the cheese. I find a great many make objection to the starter on that account, having used too much. A little good clean-flavored starter will help us to overcome bad odors and flavors. That is why I have practised using a starter. I kept a starter all through last season. It overcame the gassy condition of the milk in many cases and produced a finer article.

Then the moisture of the curing rooms, it seems to me, is a feature we need to give more attention to. I find it is a matter to which I, for one, must give more attention. in the summer, when hot weather comes on, and the room gets too dry, the surface of the cheese is liable to crack open, and all this gives the maker trouble.

There is one question I would like to hear a little more discussion on, that is in the time of going to press. This summer I found that many were advocating the putting of curds to press very much lower than I ever did. Some advocated as low as 70°. I tried it but could not get good results. Perhaps the conditions were very much different. I would like to know the experience of some one who has put curds to press at that low temperature.

Mr. STRATTON: We have pressed as low as 63° here, and I did not see any bad results from it. I would not recommend it in gassy curds, but 75° is as low as I would put to press under ordinary circumstances.

Mr. BROWN: Under what conditions did you put to press so low?

Mr. STRATTON: Just an ordinary curd.

Mr. BROWN: One of the reports states that the milk was heated with an ejector Do you think that is a good feature? I have never used an ejector for heating milk for the separator. Men who have had experience say that the milk is apt to get tainted and it is objectionable for that reason. Mr. Greiner says he found in his experiments with different ejectors that where milk is heated quickly to the separating temperature and separated immediately he found greater loss of fat in skim milk.

Mr. ROGERS: We find oy heating milk up to 95° and 100° that we can skim a little more per hour and do better work. Some separators—Alpha for one—will skim close at a low temperature, closer than at a high one. Some others skim better at a high temperature. In the case where there was such a loss in fat, I would judge that the temperature of the milk had not been lowered. With shallow pans a great deal depends on how the milk is skimmed. In some milk the cream will rise in twelve hours while in other milk it requires twenty-four. By close skimming you will have a richer cream and be able to churn at a lower temperature.

ECONOMICAL FEEDING.

By MR. GEO. MCKERROW, SUPERINTENDENT FARMERS' INSTITUTES, MADISON, WISCONSIN, U. S. A.

This question of feeding stuffs and feeding is one of the most important that we, as farmers, have to consider. It is also one of the most instructive, because in feeding we are dealing with machines which we very imperfectly understand, machines endowed with animal life, machines which cannot always be regulated as we would have them regulated, machines that are controlled by a nervous system that has to be considered if we wish to attain the best results in feeding. I shall talk to you to day, not from the standpoint of a scientist, but from the standpoint of the farmer and ordinary feeder. We have, over in the States, men who feed cattle by thousands. I have in my mind a man

who feeds so many steers that he buys a train load of oil meal at a time, and uses a great amount of other food. I do not come to you as one of that class. I come to you as a small or moderate-sized farmer of the State of Wisconsin. I come to you to give you simply my experience, or rather ideas from my experience, in feeding in a moderate way. I am sorry that I cannot talk to you as a scientist for I have not had the benefit of an education at an agricultural college. I shall talk to you as I would to a farmers' institute in the State of Wisconsin. I believe, however, you have more practical knowledge of correct methods of feeding than the average farmer of Wisconsin, and, from what I have seen of Ontario farmers, I believe that you devote more time to acquiring a proper knowledge of stock feeding than do the farmers of Wisconsin; therefore my talk may not be exactly suited to your conditions.

I have here some charts which were prepared last winter for use at Farmers' Institute meetings, and being the first I prepared are very much like the first house or the first barn a farmer builds. After using the house or barn, he sees where he could make great improvements. So with the charts.

In the agricultural papers you read a great deal about proper feeding, but many of the terms used in leading articles and bulletins are not easily understood by the average farmer, because he has not a technical knowledge of the subject. I shall endeavor in a practical way to explain their meaning.

1. Explanatory:

Term	Protein.	Ash.	Fats.	Carbohydrates { Sugar / Starch.
Object.....	Muscle.	Bone.	Fat.	Heat " Energy.
Cost to farmers in Wisconsin	1.5 cents per lb.		3.5 cents per lb.	.5 cents per lb.

2. A balanced ration = Protein 1 to Carbohydrates 6.
Oats = " 1 to " 6.2.

3 Narrow. Nutritive Ratio. Wide. Nutritive Ratio.

	Protein.		Carbohydrates.		Protein.		Carbohydrates.
Cottonseed meal.....	1	to	1.3	Barley.....	1	to	7.2
Linseed.....	1	"	1.7	Wheat.....	1	"	7.4
Skim milk	1	"	2.8	Rye	1	"	8.2
Peas....	1	"	3.2	Corn	1	"	9.7
Wheat bran.....	1	"	4.6	Timothy hay.....	1	"	15.0
Clover	1	"	5.2	Corn fodder.	1	"	15.8
				Oat straw.....	1	"	27.4
				Turnips.....	1	"	11.3

4. Always consider,—
Age of animals, individuality, climate, exercise, digestibility of foods, variety, succulence.

5. The condition of an animal's skin will indicate its value as a feeder.

6. Feed about two-thirds of a pound for each 100 pounds live weight of animal.

You will notice here on the first line the terms: *protein*, *ash*, *fat* and *carbohydrates* (principally sugar and starch). When we go over these terms, it is necessary to explain that in articles or bulletins on foods and feeding we often find this protein spoken of as "albuminoids" or, in some cases, "concentrated elements," all meaning the same; that is, the elements in foods which go to build up lean meat or muscle in the animal body. The ash is sometimes spoken of as the mineral elements of the food: it is that part of a

food stuff which remains after burning, and consists of lime, magnesia and some other elements of that class. The fats in foods, including both oils and fats, is a term easily understood. Carbohydrates are principally the sugars and starch found in the different classes of food. We shall endeavor to illustrate as clearly as possible what these substances each produce in the animal body. The protein is turned, as near as it is understood, into muscle or red meat. Ash builds the mineral part of the bone. Fats may go to produce fat in the animal body, or it may be used to maintain the heat of the body. Carbohydrates go to produce the same things—fat and heat. They can be changed in the animal body so as to produce fat, or they may be used for the production of heat and energy. In considering the effects of different substances in foods, we reckon the fats to worth two and a quarter times as much as an equal weight of carbohydrates for this production of animal fat, heat and energy. Consequently we multiply the quantity of fat in the food by $2\frac{1}{4}$ and add the result to the quantity of carbohydrates. We have figured out pretty closely what it will cost the farmer to produce a pound of each one of these substances. He can grow fats most economically in one class of crops, and carbohydrates in another different class of crops. It is well also for the farmer to know the feeding value of these substances. Prof. Woll, Assistant Chemist in the University of Wisconsin, spent some time upon this work. We take the figures as made out by him, and also by some other agricultural chemists in the United States, and find that protein can be produced at a cost of $1\frac{1}{2}$ cents a pound, fats at a cost of $3\frac{1}{2}$ cents a pound, and carbohydrates at a cost of half a cent a pound.

Dr. MILLS: That is very cheap for carbohydrates.

Mr. MCKERROW: Yes, that is cheap for carbohydrates. Twelve years ago, when I first made a trip over Ontario looking for pure bred sheep, I was surprised to find so little corn grown in this Province. In Wisconsin, we found it was the best crop for a fat producing food, and here in Ontario, among these good feeders, I found little or no corn. I found plenty of crops to produce protein, such as clover and oats, but no corn. They thought corn would not do very well. I asked some farmers why they did not try some early varieties, such as the Wisconsin, but they thought it would not pay. I am pleased, however, that in the last year or two more corn is grown. That is why we can figure out carbohydrates at about one-half cent per pound, because we grow it so cheaply in a corn crop.

Now, this element, protein, we are told by scientists, goes to the production of muscle, but, if there is not enough of the other constituents in the food, it can also be used to produce fat, heat and energy in the animal body. The animal could do without fat, sugar and starch, and protein would fill their place. But is it as profitable to feed these rich protein foods and have the animal change them over to do the work of the fats, sugar and starch as it would be to raise more cheaply a crop that contains fats, sugar and starch enough?

Fats cost $3\frac{1}{2}$ cents a pound to produce. We are told that the feeding value of these substances is estimated by the number of calories of heat that they will produce in the animal system. According to this standard, the fats have $2\frac{1}{4}$ times the value of carbohydrates, and the proteins will produce about the same amount of heat and energy as will the carbohydrates. Now, you can see that if we feed the protein alone, worth a cent and a half a pound to produce the heat and the energy in our animals, and that we could feed carbohydrates proper for half a cent a pound, or only one-third of the other, and that the one produces just as much heat and energy as the other, we would be doing a very foolish thing. Therefore, it is worth while for farmers to stop and consider what crop had better be raised to supply those constituents which give heat and energy; whether they should raise it all in peas, which is a highly nitrogenous food, or in corn, which contains a high percentage of carbohydrates.

We have heard much about balanced rations from scientists, and now farmers are beginning to talk and read about balanced rations, but they do not always understand what a balanced ration means. You have perhaps noticed the statement that all that is necessary to have your animals do the very best and reach the highest standard is simply to

have a balanced ration. An agricultural scientist stated, not very long ago, that an animal could be fed a balanced ration and at the same time be starved to death. I believe that is quite possible, for he would make that balanced ration out of foods that were so indigestible with woody fibre that the animal would need a cast iron stomach to work anything out of it; and certainly, in time, the animal would fail, and the stomach that had been overworked in trying to elaborate this woody fibre would become diseased and the animal would starve to death. So that we must be able to apply good sense and judgment as practical feeders upon some of the bulletins that come from the colleges. The digestibility of the food must be taken into consideration. A balanced ration consists of one part protein to six parts of carbohydrates. We must use our judgment, however, in deciding upon a ration, for a ration that would be the most economical for one animal would probably not be so for another. A ration that is suited for a dairy cow in full flow of milk should be somewhat different from that used in other cases. A large amount of protein goes into the production of that milk to form the albuminoids and the casein, and also a large amount of fat to form the butter fat. A well balanced ration for that cow should be narrow. Then, again, her individual temperament must be taken into consideration. If she is a cow like one I heard of, which was said to be one of the best machines as she ran everything through into the milk pail, the ration should be a little wider than one to six—perhaps one to seven would be better—so that a little flesh could be kept on her bones and at the same time have the great bulk of the food go into the milk pail. The individual feeder must use good common sense in regard to how much animals should be fed. I cannot lay down any iron-clad rules to be followed in this matter, but we must have some regard for the individuality of animals and the differences of temperament. Highly strung nervous animals should have more of the carbonaceous foods that are inclined to form fat on the animal. Those animals that are of quiet disposition, that do not take much exercise, should have more of the nitrogenous foods. As I said before, there is no iron-clad rule, but one to six is about right as determined by practical feeding and years of experience.

I have asked a great many Wisconsin men, and some in other states, this question: "If you have any animal that you wish to grow rapidly and keep healthy, so that you can bring it up to a high standard of development when mature, what one grain could you feed liberally without fear of injury, or with least fear of injury?" Now I ask you here, what one grain could you feed without risk and without fear of making their bones small and fine, without fear of throwing them out of condition? Peas are highly nitrogenous and make a narrow ration; corn, on the other hand, is a food rich in fat and in carbohydrates, making a wide ration. The most of our farmers say oats are what is wanted. Oats come the nearest of any of the grains to what we call a balanced ration, and that is one reason that the feeding of oats gives such good results. Oats when chopped up have the husks along with the grain, it being difficult to separate them as in the case of wheat, peas, or even corn. They lie longer in the stomach before being acted upon by the gastric juices.

We speak of foods being of a wide nutritive ratio or a narrow nutritive ratio and in this connection the question of cost should be considered. Cotton seed is very narrow, 1 to 1.3; skim milk 1 to 2.8; peas 1 to 3.2; wheat bran 1 to 4.6, and clover 1 to 5.2. Now, I ask the farmers again just about the same question that I asked before. I ask, in your experience in feeding growing animals or milch cows, what kind of coarse food comes the nearest to your idea of a first class ration to keep them in good health? A certain American chemist asked a number of farmers what was the best coarse food for a ration that they could grow upon their farms. They all answered, clover Here again we find clover to be a balanced ration, being 1 to 5.2. Here (on this chart) we have some wide rations: barley 1 to 7.2; wheat 1 to 7.4; rye 1 to 8.2; corn 1 to 9.7; timothy hay 1 to 15; corn fodder 1 to 15.8; oat straw 1 to 27.4; turnips 1 to 11.3. Turnips are put in here to represent a succulent food, since they contain about ninety-five per cent. of water. Our corn fodder cured out in Wisconsin contains from thirty-

eight per cent. to forty-six per cent. of water after curing. Our ensilage will contain from seventy-five per cent. to eighty-five per cent. of water.

Now we in the west have had a great deal of experience in feeding corn. Last winter a man took me out to see a car load of steers he was feeding. He told me the steers were not doing well and were not gaining in weight. I inquired what he was feeding. "Well," said he "I have a great crop of corn and I am feeding them on that." "Anything else?" "No, I have got nothing else." He had nothing else and wanted to get rid of it. I found the steers just as I expected, with dry skins. The outside skin generally indicates the condition of the digestive organs. I said, "You are drying up these steers; you are heating them; you are keeping big furnaces going with more heat than is necessary, by feeding so much corn." "I guess you are right," said he. "What shall I do? I do not want to buy food." I said, "Better sell some of the corn and buy some oil meal." Well, he said he would sell some of his corn and buy oil meal. He told me later that the effect on the steers was wonderful. They began to get sleek in the coat; they also got sleek inside. Now there is one point I should like to impress upon these young men: that when you see animals with dry skins you may make up your mind that the animal requires something in the shape of a more highly nitrogenous food, such as linseed meal or wheat bran—something of a laxative nature. It may seem strange to you that if the feeder referred to had mixed some roots with the corn the steers would not have dried up the way they did. If he had given them mangels or turnips the animals would have been kept in good condition The roots would have overcome the heat. It has been the experience of some of the best feeders and dairymen that they can get better results from corn ensilage than from corn fodder. Corn ensilage has seventy-five per cent. water while corn fodder has only about forty per cent. Succulence is, therefore, a great consideration in feeding animals. I have sometimes stepped into Ontario feeding barns where I found the other extreme. Ontario feeders use pretty heavy food. So, I say, watch that very carefully here. Where grain is fed it is very hard on the digestive organs of the animal and to a certain extent sickens. Milk is a balanced ration although somewhat narrow, being one to six. As an animal grows older, however, it would not be economy to feed milk, because butter fat is too valuable to feed and it would be cheaper to replace it with something else. We find other foods that give good results and produce better beef than skim milk. Succulence is a very important feature when preparing a ration. I do not believe you can get the very best results by feeding oats alone. Make the ration half oats and half corn and peas; you will thus get better results than by feeding oats alone. Variety should also be taken into consideration. If a human being were fed potatoes alone for a time, and then on meat alone, it would not be so good as to have a variety. Some farmers will say to me, "Mr McKerrow, my cattle are not looking very well." This is usually late in the winter when they are getting lots of straw and some marsh hay. There may be a little clover hay that is being saved until spring. It does not do to feed one kind of food exclusively for a length of time. If we were fed on potatoes alone every day we would not thrive.

Now, I have been talking on one side of this subject, but I have another chart here showing how we might figure out rations from a scientific standpoint:

RATION FOR 1,000 POUND COW.

Object.	Organic Matter.	Digestible nutrients.			Nutritive ratio.	
		Protein.	Carbo.	Fat.	Protein.	Carbo.
Maintenance	17.5	.7	8.0	.15	1	to 11.9
Av. for production	25.	2.5	12.5	.6	1	to 5.5
Prof. Woll's ration	24.5	2.2	13.3	.7	1	to 6.8

Sample Ration Figured Out.

	Lbs. fed.	Protein.	Carbohydrates.	Fat.
Corn ensilage	30	× 8 % = .24	× 10 9 % = 3.27	× 9. % = .21
Clover hay	8	× 8.1 % = .65	× 39.1 % = 3.13	× 2.1 % = .17
Corn meal	4	× 7. % = .28	× 66.2 % = 2.65	× 3.3 % = .13
Wheat bran	6	× 11.2 % = .67	× 54 % = 3.26	× 3.5 % = .21
Oil meal	2	× 28.2 % = .56	× 32.9 % = 66	× 7.1 % = .14
Totals		2.40	12.97	.86

Nutritive ratio, 1 to 5.7.

Here is a ration for a thousand pound cow having 17½ pounds of maintenance food, containing about .7 of a pound of digestible protein, about eight pounds of digestible carbohydrates, and about .15 of a pound of digestible fats. This gives 1 of protein to 11.9 of carbohydrates, including sugar and starch, as I explained before. Now, under this ration the animal is simply supportiug itself, simply holding and making good the waste of the system. There is nothing supplied for more muscle or for more bone—it is simply the food of maintenance and covers no energy being expended and no production of any kind.

The average food of production for a thousand pound cow runs something like twenty-five pounds of organic matter containing say two and a half pounds of digestible protein to twelve and a half of carbohydrates, and .6 of a pound of fat, which gives a ratio of 1 of protein to 5.5 of carbohydrates. Prof. Woll, of Wisconsin, makes that a little wider, basing it somewhat upon the experience of the one hundred dairymen whose feeding ration he gives in the bulletin that he issued.

Here is a sample ration that is figured out. The first thing is the corn silage, 30 pounds. This is the total amount, not the organic matter that we are talking of now. You examine some feeding table that is carried out complete, and you put down on a piece of paper the amount you wish to feed—we will say the 30 pounds of silage—and you look along the columns and find the percentage of protein as found by analysis. In this case it is 8 per cent. digestible protein. You multiply that and you get .24 of a pound of digestible protein in that 30 pounds. Of digestible carbohydrates 1.9 per cent., which, multiplied, gives in the 30 pounds 3.27 pounds of carbohydrates. We find in the same way that there are .21 pounds of fat. Then you take your clover hay and figure it out in the same way ; also the corn meal, the wheat bran and the oil meal. You find that you have 2.40 digestible protein, 12.97 digestible carbohydrates, and .86 pounds of fat, and this makes a ration of practically 1 to 6. To figure this ration we multiply the amount of fat by 2.25, because, as we have said before, fat is 2.25 times as valuable as carbohydrates in the production of heat, and heat is the unit of measure used to determine the value of these foods. Add to that the carbohydrates proper, the sugar and starch, and you will get something over 14. Then divide that by the protein, 2.41 pounds, and you get the ratio existing, which is practically 1 to 6. That is an average day's ration.

Let me say, in closing, that I am well pleased with this meeting of the Experimental Union. I heard Mr. Zavitz say something about your Union at the annual meeting of the American colleges and stations held in Minnesota in 1897. I think this is one of the greatest advances in agricultural education that you have got here in this Province for the carrying on of practical work.

CO-OPERATIVE EXPERIMENTS IN HORTICULTURE.

By H. L. Hutt, B.S.A., Director of Co-operative Experiments in Horticulture, Agricultural College, Guelph, Ont.

The co-operative testing of small fruits was begun in 1894 with strawberries, red raspberries, black raspberries and currants, fifteen lots of plants being sent out for each experiment. Each year since that time we have gradually increased the number of experiments and the quantity of plants sent out. In 1895, gooseberries were added to the list, and twenty lots of plants sent out for each of the five experiments. In 1896, blackberries were added, and twenty lots of plants sent out for each of the six experiments. This last spring, fifty lots of plants were sent out for the strawberry test, and twenty for each of the others.

The following is the list of plants offered to experimenters last spring:

Strawberries—Haverland, Bubach, Woolverton and Van Deman—12 of each.

Raspberries—Marlboro', Cuthbert, Shaffer's Colossal and Golden Queen—6 of each.

Black Raspberries—Souhegan, Gregg, Palmer and Hilborn—6 of each.

Blackberries—Kittatinny, Snyder, Taylor and Gainor—6 of each.

Currants—Fay's Prolific, Victoria, Raby Castle and White Grape—3 of each.

Gooseberries—Houghton, Downing, Whitesmith and Industry—3 of each.

The number of applications for plants has been increasing each year, and has always exceeded the supply for distribution. This year it nearly doubled the supply. It is evident, therefore, that the applications for plants cannot be met without an increased grant for their purchase. It may be well to mention here that the plants for these experiments are not grown at the College, as many seem to suppose, but they are purchased and distributed from nurseries where they can be more conveniently and cheaply grown.

In the past, the unsatisfactory character of the reports from the majority of experimenters has not warranted us in asking for an increased grant for this purpose, as, until this year, we have never been able to give any report as to the yieldof varieties because of the few reports of carefully recorded yields sent in by experimenters. This has not been altogether their fault as there were during the first year or two many drawbacks to thesuccessful conducting of the work. In the first place we could not get the plants sent out from the nursery in the proper time. The seasons, also, were so unfavorable for planting, owing to the severe droughts, that many failed to get a good stand of plants. In 1895, the late spring frosts destroyed the greater part of the fruit crop, and in many cases injured the fruiting canes for the next year. Of late, we have not had such obstacles to contend with. The past two years we have been getting the plants from three different nurseries, and have succeeded in having them sent out in good time in the spring. The seasons also have been more favorable and the planting has been more successful. Consequently we may look for better reports in the future from the plants of the last two years' setting.

The report this year is upon the yields from plants set out during the past three years, and upon the growth of plants set out last spring. From the particulars given as to the lots of plants sent out for each experiment and the number of reports received, it will be seen what a small percentage of experimenters successfully carry out the experiments and properly report them. We hope in time to improve this by dropping from our list all who will not make an effort to properly report results, and by sending plants to those only who will properly care for them and report as requested.

Report on Plants Set Out in 1894.

1. *Strawberries.*

Number receiving plants, 15. Number reporting this year, 2. Number giving records of yields, none. This is, of course, all that could be expected from plants set

out so long ago. The only yields worth recording from strawberry plants are obtained the first and second years after planting.

2. *Red Raspberries.*

Number receiving plants, 15. Number reporting this year, 2. Number giving records of yields, 2. Average of results per bush: Shaffer, 56.6 oz.; Cuthbert, 28.3 oz.; Golden Queen, 25.0 oz.; Marlboro', 20.0 oz.

3. *Black Raspberries.*

Number receiving plants, 15. Number reporting this year, 3. Number giving records of yields, 2. Average of results per bush: Palmer, 11.3 oz.; Tyler, 10.5 oz. Souhegan, 8.0 oz.; Gregg, 4.3 oz.

4. *Currants.*

Number receiving plants, 15. Number reporting this year, 4. Number giving records of yields, 2. Average of results per bush: White Grape, 101.6 oz.; Raby Castle, 73.9 oz.; Fay's Prolific, 39.3 oz; Victoria, 28.0 oz. Quite a number report plants as doing well, but could give no record of yields.

REPORT ON PLANTS SET OUT IN 1895.

1. *Strawberries.*

Number receiving plants, 20. Number reporting this year, 2. Number giving records of yields, 1. Results per plant set: Bubach, 25.5 oz.; Wilson, 10.3 oz.; Beder Wood, 7.0 oz.; Williams, plants all failed. Most of the strawberry plants set out that year failed to grow.

2. *Red Raspberries.*

Number receiving plants, 20. Number reporting this year, 8. Number reporting yields, 3. Average of results per bush: Golden Queen, 34.8 oz.; Shaffer, 29.2 oz.; Marlboro', 28.3 oz.; Cuthbert, 27.5 oz.

3. *Black Raspberries.*

Number receiving plants, 20. Number reporting this year, 4. Number reporting yields, 3. Average of results per bush: Gregg, 34.8 oz.; Palmer, 24.0 oz.; Tyler, 23.2 oz.; Souhegan, 19.5 oz.

4. *Currants.*

Number receiving plants, 20. Number reporting this year, 4. Number reporting yields, 1. Results per bush: Raby Castle, 18.0 oz.; Victoria, 17.0 oz.; Fay's Prolific, 9.0 oz.; White Grape, 6.0 oz. There should have been more reports of yields from these plants, as there were eleven who reported that year that all the plants were living and doing well.

5. *Gooseberries.*

Number receiving plants, 20. Number of reports received this year, 11. Ten of these report all plants living. Number reporting yields, 6. Average of results per bush: Houghton, 171 oz.; Downing, 169 oz.; Industry, 46 oz.; Whitesmith, 40 oz.

REPORT ON PLANTS SET OUT IN 1896.

1. *Strawberries.*

Number receiving plants, 20. Number reporting this year, 13. Number reporting yields, 10. Average of results per 15 ft. row.: Haverland, 85.1 oz.; Woolverton, 62.5 oz.; Bubach, 58.3 oz.; Van Deman, 50.8 oz.

2. *Red Raspberries.*

Number receiving plants, 20. Number of reports received this year, 4. None give records of yields, although a number last year reported a fair stand of plants.

3. *Black Raspberries.*

Number receiving plants, 20. Number reporting this year, 9. Number reporting yields, 5. Average of results per bush: Palmer, 15.3 oz; Souhegan, 13.5 oz.; Hilborn, 10.6 oz; Gregg, 6.0 oz. These results correspond with the results obtained here this year.

4. *Blackberries.*

Number receiving plants, 20. Number reporting this year, 10. One report of yields per bush is as follows: Taylor, 20.6 oz; Snyder, 20.0 oz.; Kittatinny, 19.0 oz.; Gainor, 16.5 oz.

5. *Currants.*

Number receiving plants, 20. Number reporting this year, 8. None give records of yields, although fourteen reported last year that most of the plants were living and doing well.

5. *Gooseberries.*

Number receiving plants, 20. Number reporting this year, 10. These all report plants as living and doing well. Number giving records of yields, 4. Average of results per bush.: Houghton, 26.4 oz.; Downing, 21.7 oz; Industry, 13.3 oz.; Whitesmith, 5.3 oz.

Report on Growth of Plants Set Out in 1897.

1. *Strawberries.*

Number receiving plants, 50. Number reporting upon growth of plants this fall, 31. Nearly all report that plants were received in good condition and that most of them had lived. A number report that although the plants have lived, they have not made as many runners as they should have done. This, I think, was due to the plants being checked in growth by sending them out too early this year.

2. *Red Raspberries.*

Number receiving plants, 20. Number reporting on their growth, 13. Eleven of these report all plants living and doing well.

3. *Black Raspberries.*

Number receiving plants, 20. Number reporting on their growth, 13. None report a full stand of plants, although most of them lived and have made a fair growth.

4. *Blackberries.*

Number receiving plants, 20. Number reporting on their growth, 12. One reports a full stand of plants. Majority report a few failures of the Taylor variety,

5. *Currants.*

Number receiving plants, 20. Number reporting on their growth, 12. Eleven of these report all plants as living and having made a good growth.

6. *Gooseberries.*

Number receiving plants, 20. Number reporting on their growth, 19. Thirteen of these report all plants as living and doing well; the others, but one or two, failures.

Mr. H. L. BECKETT: I and many others have been disappointed from year to year in not receiving a very definite report from this committee. I know they have a great deal to contend with. It takes three or four years before getting returns. It is very hard to conduct experiments with small fruits properly and prevent plants from being destroyed in different ways. I think the report, however, is very encouraging this year. This work is very important to fruit growers, as we find the varieties differ so much in different localities and on different soils. Now, in the locality where I live, one variety takes the lead, and growers prefer it because they get better results from it. We learn from these experiments that it proves to be a poor variety in some localities. I have not done much in small fruits, as I am more in tree fruits. The report is very encouraging. Go on with the work and try and get even more definite results. We all want the varieties that will give us the best returns, and beginners are very often in doubt as to which varieties will be best. It is hard to get two growers to agree. We wish to know definitely what varieties to plant. I think the committee is getting the work in very good shape.

Mr. HUTT: In saying that the Williams was a poor variety, the idea I meant to convey was that there were many other varieties much better, but we have had many varieties that have gone away ahead of it. In experimenting with one hundred and fifty varieties the Japanese Prolific is at the head of the list.

Dr. MILLS: Where does the Warfield stand in the list this year?

Mr. HUTT: This year it is about forty-eighth on the list on account of the severe drouth.

Mr. G. A. ROBERTSON: I notice Mr. Hutt made mention of the Haverland, Brandywine and Williams. I found that the Haverland was not fit to eat, much less for shipping. We had a little rain when we went to pick them. A person's finger would go right through them, unless too green. Wolverton berries were too small. Bubach were all right. Brandywine were almost ahead of the Williams in size, better colored and a better flavored berry. Some of these varieties that head the list here were almost worthless with us. There is nothing to equal the Williams among the six or seven varieties that I grew. The only fault was the green tip. I does not ripen evenly for market. The first thing to look at is size, then color, then shipping qualities, and last of all, flavor. When people get to know the quality of a certain variety, however, they ask for that variety. Some of these varieties will do well on light land, some on heavy; some are almost worthless on sand and some on heavy soil. We must have special varieties for special soils

Mr. N. MONTEITH: I think the horticultural committee might increase its usefulness by including larger fruits more than in the past. I regret to say that throughout the west the past year blight has been more prevalent in pear orchards, and in some cases orchards have been almost wiped out of existence. This is a practical work for our committee, and a little investigation along this line will be helpful. I found last year, during my connection with Institute work, that one of the greatest questions to contend with was the one regarding the best fruits to grow in the various parts of the Province. It might be well to get some data through the medium of this committee as to how the different varieties succeed throughout the various sections of the country. It is wrong for the average horticulturist to lay down a definite rule as to what fruits he shall grow without some definite knowledge on the matter. In our own districts some varieties have been largely planted, through the reports received from the Fruit Growers' Associations, and they have proven worthless. Accurate information along this line which I have indicated would be of great service.

THE ONTARIO FRUIT EXPERIMENT STATIONS.

By Dr. Jas. Mills, President Ontario Agricultural College, Guelph, Ont.

The Ontario Fruit Experiment Stations are under the control of a board of five, two of whom represent the College and three represent the Fruit Growers' Association. I am *ex-officio* Chairman of the Board, and our Horticulturist is an *ex officio* member. The three other members are chosen annually by the Fruit Growers' Association. We have also a Secretary, Mr. L. Woolverton, of Grimsby, who, in a sense, represents the Fruit Growers' Association.

The object of the stations is to test varieties of fruit on different soils and under different climatic conditions; also to introduce and test all likely new varieties of fruit in the different parts of the Province. At the present time we have eleven stations and two sub-stations, and we intend at an early date to establish another station somewhere in Algoma or Parry Sound. Strong pressure has been brought to bear upon us to establish a station in that part of the country. They can grow some varieties of apples very well, and it is likely that we shall comply with their request for a station. The stations at present established are the following:

No. 1, called the *South-western Station*, is in the county of Essex, in charge of Mr. Hilborn. This station has peach-growing as a specialty, but reports on other kinds of fruit adapted to that part of the Province.

No. 2, known as the *Niagara Station*, is at St. Catharines, Lincoln county, and is intended to test various kinds and varieties of tender fruits. Of course there are many varieties which it would be useless to try in any but the warmer sections.

No. 3 is known as the *Winona Station*. Grapes are the specialty at this station. Winona is one of the best grape-growing districts. Mr. M. Pettit, who has charge of the station, has a large vineyard, and he reports to us the results from year to year.

No. 4 is the *Burlington Station*, Halton County. A graduate of the University of Toronto manages this station. He deals chiefly with blackberries and gooseberries. He has a long list of small fruits, and furnishes valuable reports.

No. 5, known as *Huron Station*, at Walkerton, makes a speciality of apples and gives some attention to other hardy fruits suitable to that locality.

No. 6 is known as *Georgian Bay Station*, and is in the county of Grey, near Thornbury, with plums as a speciality.

No. 7, the *Simcoe Station*, is at Craighurst, in the County of Simcoe, near Barrie. At this station hardy apples and hardy cherries are being tested.

No. 8 is known as the *East Central Station*, near Whitby, Ontario county. The specialty here is pears and commercial apples.

No. 9 is the *Bay of Quinte Station*, in East Northumberland, with apples as a speciality. Mr. Dempsey, who manages this station, has one of the best orchards in the Dominion of Canada. We could not obtain more valuable results anywhere else in the Dominion than from Mr. Dempsey.

No. 10 is the *St. Lawrence Station*, near Maitland, Grenville County. This station is under the supervision of a very active, enterprising young man. He is making a speciality of the hardy kinds of fruit, especially apples, plums, and pears.

Station No. 11, the Cherry Station and General Collection of Fruits for Descriptive Work, is under the supervision of Mr. L. Woolverton of Grimsby. Mr. Woolverton has one of the best collections of fruit to be found in the Province, the greatest variety and of good quality. In our tests Mr. Woolverton makes a specialty of cherries. Mr. Woolverton is also preparing for the Board a work on the "Fruits of Ontario." He spends a considerable amount of time on this work. He photographs each variety, and writes a very careful description, giving all its characteristics, and in fact everything he knows abaut it. Then at the Board meeting he submits these descriptions for criticism by such

experts as Mr. A. H. Pettit, A. M. Smith and Mr. Wellington, of Stone & Wellington. Instalments from this work are published from year to year in our annual report; and when the list of varieties is completed, we hope to be able to publish at small cost a most valuable work for the farmers and fruit growers of this country. It was a question whether or not we should allow Mr. Woolverton to prepare the work at his own cost and afterwards control it; but we finally decided to pay him for his services and control the book ourselves for the benefit of the people. Every one here ought to get our annual report and read it carefully.

I must not forget to mention our two sub-stations. There is one little station between Barrie and Bradford in the county of Simcoe, that furnishes valuable reports on gooseberries. The other sub-station is in charge of Rev. E. Stevenson, who has had experience in the nursery business. He furnishes very valuable reports on strawberries

In selecting the places for each station we took into account the locality, soil and climate; and endeavored to get in each place a man who had a good orchard or garden to begin with, and who was likely to do good work. We wanted to get results at once; so we require all experimenters to report on what they have in their own orchards, as well as on the varieties which we send them. So far we have been successful in getting good men. They are willing to take whatever we send to them and handle it according to our instructions. If any one does not do as instructed, he must make way for some one else who will. We make an annual exhibit at the Industrial Fair, Toronto, requiring our experimenters to send fair samples of the fruit grown at the several stations.

Fruit growing is becoming more and more important since the Dominion Government has undertaken to provide cold storage for fruit as may be required by the growers. Through this improved system of transportation, we hope to find a market for our surplus fruit.

Mr. N. Monteith, Stratford: The western counties are large producers of apples. Those stations are outside of the apple belt. I am not advising the establishment of a station, but some means of having information in this line of work sent out that it might be used as a guide.

Mr. Geo. Harcourt: Your idea is to have a bureau of information on the subject?

Mr. Monteith: Yes.

Mr. Geo Harcourt: You mean to collect information as to which varieties are doing the best and are proving the most profitable.

Mr. Monteith: Very much on the plan used by the Ontario Agricultural Commission of 1881.

FARM DEVELOPMENT AND FORESTRY.

By Mr. W. T. Macoun, Experimental Farm, Ottawa.

During the time I have been with you, yesterday and to-day, I have regretted more than ever before that I never took a course in the Agricultural College at Guelph. When I see so many young men my own age, and feel they are all interested in the same work as myself, I regret that no other bond of union binds us except the interest in the work. I can imagine the feelings of ex-students who come here to improve one another and exchange reminiscences of olden times. I deeply regret that it is not my privilege to be one of you, but as you know, I am here representing the Dominion Experimental Farms. I would like to tell you right here the hearty sympathy we have with the work of the Ontario Agricultural Union. We read with great interest of the work being done—this grand work for the farmers of the country.

The development of the farming industry of the country rests almost entirely with the young men. The older men have been doing business without having had time to study the scientific aspects of farming, and, therefore, are liable to let their ideas run in the line of tradition. Now, I think one of the principal things that this Union and the

Ontario Agricultural College is doing is the scattering of the traditions of the older farmers of the Dominion, showing that their methods are not always the right ones; how to produce more crops on their land; how to produce larger yields per acre, and I think in this way the Union is doing a good work. Now, I should just like to tell you a little of the work that we are doing at the Central Experimental Farm, and show you that the work there is running along the same line. I have been for ten years connected with the Farm, and during that time the work has largely increased, until now, I think, our experiments reach even the magnitude of yours here—that is in the agricultural department—and I think we are doing a good work for the farmers. I might say that our plan is not the same as here. The plots of grain on which we experiment are nearly all one-twentieth of an acre. Now we find that although we do not get as uniform results as those obtained at the Agricultural College, yet we are able to study the conditions of the different varieties better on the larger plots than on smaller sized ones. It takes us a greater number of years to arrive at results, but our knowledge of varieties is better by having them on larger plots. We find small plots are more liable to be injured by wind, and being so narrow the air produces a larger growth. We find conditions between farmers' plots and our own are so much wider. I am very glad to say that I have observed from the charts here yesterday and to-eay that some of the varieties which are doing the best here are doing the best with us. You know conditions and climate are much different, therefore, we cannot expect to have quite the same. Regarding the grain distribution which is carried on at Ottawa, and which some agricultural papers have hinted as being similar to that carried on in the United States, I want to contradict that statement. We have five farms situated in several Provinces of the Dominion—Nova Scotia, Ontario, Manitoba, N. W. Territories, and British Columbia. Each year we average the results obtained at these different farms, and find out the varieties doing the best all over the Dominion. We are able to obtain from our farms in the North-West and Manitoba large quantities of grain to distribute to the farmers all over the Dominion. Our distribution last year amounted to thirty-seven thousand samples, representing nearly as many individuals. The object aimed at is not quite the same as here—that is, we do not send them out for the farmers to find out which will do the best on their land, but to put into the farmers' hands the best varieties of grain. We send out three pounds, the farmers thereby having a chance of getting from one hundred to one hundred and twenty pounds of oats, enough to sow an acre the following year. In this way we are doing a great work for the farmers.

Another branch of the work I am especially interested in is that of forestry, and the cultivation of trees and shrubs. Now, it is a matter of great surprise, when driving through Ontario, and especially the older provinces, to find so little work being done in the planting of trees. That is one reason that the farm home has so little attraction to the farmers' sons and daughters. When you see a house out in the middle of a field for instance, with no trees around it, it is no wonder that farmers' sons seek town life. To my mind it is to the interest of farmers to plant and ornament about their houses. It could be done very simply by planting a tree or two in the spring time and which will greatly add to the beauty of the place. We find at the farm a tremendous change. We have trees, twenty, twenty-five, and thirty feet in height, and only planted eight or nine years ago. How quickly the architecture of the surroundings can be changed. We have grown certain trees to demonstrate how quickly they will attain to a size which will be useful and valuable for timber. We know on most of the farms in Ontario the wood has been cut off. To my mind, every farmer who has poor land to work and hillsides hard to cultivate, should at once plant some valuable timber trees. Those who are well acquainted with the College can see walnut trees planted on the ground here about fifteen years. They are now eight inches through. We have, at the Experimental Farm, walnut trees fruiting for two years which were planted in 1888. So much for the black walnut, which demonstrates how quickly trees grow. We have pines, the great timber tree of Canada, which are making more than two feet of growth each year. We have them now fifteen or sixteen feet high, which were planted in 1889. These were ten inches high when planted, showing how quickly these will grow up. Now, to my mind, farmers neglect this matter of planting trees which will become valuable for timber. I think it would be, especially by using black walnut and white pine, one of the most paying crops the farmer could plant. I

think if any one could talk up that line of work it would be very valuable to the farmers of Ontario. To those who intend to plant trees on the farm, I may say that it is very important to plant them close. In 1888 we began trying different methods of planting, some ten, some five, some ten by five; some plots with one variety together, others with several varieties together, and so on. We find the trees planted close together give by far the best results, for this reason, that in a very short time the trees make a shade and cover the ground, smothering all grain, grass, etc. The forest conditions are thus maintained. If trees are wide apart, to get satisfactory results they must be cultivated. You have to cultivate trees as much as any other crop. We have found in those varieties of trees where the foliage has been thin and we plant wide apart, and where branches are thick and you cannot get through with the cultivator, the trees get stunted. We try to avoid this by cutting out the foliage as much as possible. That is why we always advise planting the trees close together, because it will preserve forest conditions and will make branches die off. The longer the branches stand the bigger the knot will be in the timber. By planting closer leaders are less liable to be broken by wind, and in every way it is the most satisfactory method, and thus I would advise mixing different sorts together. Some trees having very thin foliage—for instance, the black walnut—are better mixed. Thin foliage trees are liable to let sunlight in and start weeds to grow. Most satisfactory growth can be obtained by mixing. I may say that if trees are planted properly, and taken care of, in from three to four years no further work is necessary in the way of cultivation. For the first two or three years cultivate the same as for a corn crop; after that no further cultivation is necessary. Another important thing is to prevent the poor sorts crowding out the others. We get some very valuable data on the farm which we publish from time to time, and which is bound to be valuable to the farmers when realizing how important it is. I was asking one lumberman this summer why he did not plant one thousand acres or so of timber trees. "We have all we want for our time," he said. Suppose a farmer or lumberman had twenty-five years ago planted out a young forest, how valuable it would be to-day. By planting now you will be leaving to your sons a crop which will be very valuable in time to come. I hope before long to see farmers taking up this question. I wish to say how very much I enjoyed this meeting. I feel, although it has been my first meeting that I have been able to attend, that I shall use all my influence, which is very slight, towards advancing the interests of this Union. This meeting has done me a great deal of good, and when I return to Ottawa I shall try and communicate to the other members of the station what I have learned while here.

Mr. HUTT: Did you ever try growing white pine from seed?

Mr. MACOUN: We have grown the Scotch pine from seed. We find that sowing seed in beds covered with laths is the best method to start them. Before sitting down I would like to speak on another important matter. You all know it is customary for farmers in the summer, when the grass is dried up, to turn cattle into what little wood they have on their farm. The result is that the seedlings are killed. Now, when coming from Toronto yesterday, I took notice of the fact, that in nearly every piece of wood there were no young trees growing up. The reason for this is that they were destroyed by cattle. I would advise young men on the farm to persist in turning them out.

Dr. MILLS: There are many barren hills between here and Acton. How could timber trees be started on these bleak hills. The chances are, that in ordinary seasons nine out of the ten trees planted would die. How would you proceed with planting them?

Mr. MACOUN: A great many people make a mistake in planting trees by letting the roots dry out. It is rather difficult to plant on a hillside like that, but if the roots of trees are not dried out, and the tree is properly planted, in a proper place made for the tree, it will be very apt to grow, and in the future will repay for the trouble taken. If the roots once get a good hold, the tree will be all right. If you stick the tree in the ground without making a proper place, it will die. If the hill is very bare, protect by planting underbrush. Low-growing sorts cover the ground and protect it from the sun

and in that way protect the trees. If a man is going to plant trees he should plant those sorts that will be of value in the future.

Mr. GEO. HARCOURT: It would be a good idea wherever a tree is cut down to plant a new one in its place. I think it would be a good thing for the ex-students to make the start of reforesting the farm. Many bare places on the farm could be turned to good advantage by planting trees. We would in this way leave behind us that which would be a legacy.

Mr. MACOUN: Starting an arbor day among the ex-students, I think, would be a good plan.

A MEMBER: As to setting out walnut trees about a foot high, people in our neighborhood are under the impression that black walnut trees will almost invariably die at this age. People who have had considerable experience in planting are not able to get them to live, and claim the only way is to plant the nuts in the fall.

Mr. MACOUN: We have grown them successfully by planting year old plants. The reason people are not able to grow them is that they fail to plant them properly. The walnut tree has very few fibers, and has a long tap root. If the few fibers the tree has dry up the tree will not draw any moisture and consequently will die. The principal thing is not to let the fibrous roots dry up from the time the tree is taken up until it is planted again. Do not try to plant trees that are large. You will have better success with smaller ones. I wish to call your attention to some trees on the college grounds that were transplanted a great many years ago. Any one who will look at them will notice what a stunted appearance they have. In ten years' time trees would be as large by planting a small tree.

Mr. HUTT: It is generally recommended by nurserymen to cut trees back when received. My opinion is somewhat changed on that point. I know some who have let the trees grow just as received from the nursery. I would like to have Mr. Macoun's experience along that line.

Mr. MACOUN: I would say that our experience has been that we obtained best results by trimming back. Of course, as I say, there are trees you plant so small it is not necessary to cut them back because roots are not injured when taken up. There is no necessity for cutting them back. We find that when larger trees and shrubs are planted they may be cut back. If trees are taken up carefully there is not much need for trimming back, but if roots are injured trim the tree, inasmuch as you trim the roots.

Mr. CARTWRIGHT: Would you recommend planting small apple trees, or apple trees of a little larger size?

Mr. MACOUN: I have not had much experience in regard to this, but certainly think it would pay to plant small ones.

A MEMBER: Is it a good plan to plant forest trees on low land?

Mr. MACOUN: It it drained?

A MEMBER: Yes.

Mr. MACOUN: I may say we have a belt on the poorest land on the farm, low sandy soil, unsuitable for grain crops. We have grown on this land European larch and Scotch pine, and they are doing exceedingly well. On similar soil, black walnut has not made any growth—only two or three inches growth in years—so there is no use in planting black walnut on that soil, but Scotch pine and European larch are doing well. I have had no experience with white pine on low soil.

DRESSED POULTRY FOR MARKET.

By L. G. Jarvis, Ontario Agricultural College, Guelph, Ont.

The main object in breeding poultry is to make the business remunerative, and to do this, especially where eggs, dressed fowl and broilers are raised, judgment should be used in many ways.

First, the requirements of the market where the stock is to be sold should be studied. Second, all stock should be of the finest quality, properly killed, neatly dressed and properly packed. Third, all eggs should be gathered and marketed regularly, and sorted according to color and size.

Our home markets require dressed fowls, and the main idea should be to have our fowls, when ready for market, fat, healthy and uniform in size. Such fowls, if properly dressed, will command a ready sale at any time of the year, while poor, skinny, badly-picked fowls go begging. So, if we expect to find a good market for our dressed poultry, we must only kill those that are in fine condition.

It is almost incredible, yet a fact, that many breeders and commission men kill, dress and market diseased poultry. I have seen exposed for sale on our markets, both alive and dressed, fowls affected with roup, distemper and other diseases. For instance, I have seen a large number of fowls held for sale where I have known that a large portion of them was diseased, and I know of them being sold to hucksters, and of course they indignantly disclaim any idea of selling diseased fowls, and we were inclined to believe they did not do so intentionally. But unless the utmost vigilance is exercised in weeding out or isolating those birds that show any signs of being diseased, we are apt to be unintentionally assisting in such business. Supposing, for instance, you have a lot of fowls for sale. A man comes along and makes you an offer for the lot, among them might be a few birds that you had known to be affected with some disease, or you may have had a few separated from the rest of the flock that showed signs of disease, the buyer tells you that he can cure them, and you sell the entire lot, making of course a reduction or throw in the sick lot. When the man gets them to their destination he kills the worst ones first, for fear they might die on his hands. I would say never sell a fowl that you cannot leave the head on and never buy one with the head off. Some eggs appear best scrambled; some fowls look best "heads off." A dealer in horses who doses and doctors an animal to conceal some imperfections is twice the man in comparison with the person who knowingly sells a diseased fowl for food.

Fowls as a rule are not properly fatted for the market; there is absolutely no preparation feed given; they are simply picked up from the yard, killed, and indifferently plucked, and then brought to the market. What is the natural result? Simply that the purchasers, noticing this indifference, is also indifferent whether he takes the birds or not and gives a low price. Then the farmer complains. I will give two cases in point. In conversation last week with a man who was employed at one of the largest produce houses in Toronto, he said a lady brought in about seven pairs of chickens, miserable, skinny looking things, indifferently killed, showing sharp breast bones and having been poorly plucked. She was offered thirty cents per pair for them, but would not take it. She left the store. The manager was extremely anxious to get a splendid show of chickens, ducks, geese and turkeys for Thanksgiving. About fifteen minutes afterwards a man and his wife pulled up to the door and said they had some chickens to sell. The manager looked at them. They were pure-bred Plymouth Rocks, nicely fatted, neatly killed and thoroughly dressed. He asked her when they were hatched. She replied about the first week in June. They were fine large birds with plump breasts and yellow skin. The manager asked her what she wanted for them. She said she did not know, but saw that the top price was about fifty cents, and she thought her chickens were as good as any. The manager asked her how many pairs she had; she said fourteen and a half. He then asked her if she would take sixty cents per pair for

them, and she said "Yes." "All right, Madam," he said, "I will give you eighty cents a pair for chickens such as those in order to encourage you to bring in more like them" She seemed dumbfounded for the moment, but thanked him, and said she could let him have about ten pairs more just as good. The chickens were brought in the next day, and he fully explained to her why he had given her such a price, and handed her $11.60. She explained to the buyer that she took a great deal of pains with her fowls, and had specially shut these birds up for about ten days and fattened them, using ground oats, corn meal, and a little pea meal as soft food, and giving barley and corn every alternate night. While that lady was in the store the other one came back and said she could not better the thirty cents, but the manager would not take her fowls, and she was brought in and given an object lesson in caring for chickens, dressing, plucking and feeding. She was simply astonished at the other woman's chickens (24½ pair as the other ten pair were brought in the next day.) Within two hours after they had been placed in the window, they were all sold at $1.00 per pair. What is pleasing to the eye is also pleasing to the taste.

Messrs. E. & D. Mulholland (F. Mulholland being an ex-student of the College) have been doing splendid work with ducks. They had two Aylsbury ducks and a Pekin drake. They sold about eighty ducks between June and October, all hatched from eggs laid by these two ducks, for $1 per pair down to 75 cents, and these ducks were marketed alive. Nearly all were sold when ten weeks old and many were sold when eight weeks old. The purchaser said they were the best ducks that came to his store this year. Is there not money in that?

The proper way to kill chickens is to hang them up waist high, and then with a sharp knife make a cut into the roof of the mouth running the knife well up into the brain as they will die much quicker. Do not wait until the fowl becomes cold before you commence plucking, or even to stop fluttering, as they are perfectly numb. It is impossible to dry pick them after they become cold Begin by pulling the light feathers and tail, then the breast and so on until perfectly clean. Do not leave any pin feathers, as nothing so destroys the appearance. Do not singe the fine feathers, as is often done, as it gives the skin an oily appearance. As soon as you are through plucking wash the blood from the head and the dirt from the shank and feet. When through lay on dry table to cool.

Turkeys, geese and ducks may be killed by the same process. Old turkeys should be killed before Christmas, for after that the demand is almost entirely for small plump ones.

Poultry to be shipped should be thoroughly dry and cold before being packed, for if encased while the animal heat is still in the body, they quickly decompose.

Boxes holding from one hundred to one hundred and fifty pounds are preferred for turkeys and geese, while barrels do very well for chickens and ducks. Both should have some ventilation. This can be obtained by cutting a few holes in the sides. Some prefer packing with clean rye straw, while others wrap the carcase in brown paper, then pack in snugly, and, when the case is full, fasten carefully so as to avoid shaking, and mark the number, kind, and weight on each package.

I have a few pure bred and a few cross bred fowl here dressed, some being drawn and others undrawn. There are markets that prefer to have the poultry drawn—in fact you will find customers in any city or town who prefer and will pay a higher price for birds when drawn.

W. R. Graham, B.S.A., Belleville: Mr. Harcourt has said that I have been dabbling more or less in the poultry business since I was a boy big enough to carry a hen under my arm. I may say since leaving the College that I have helped to dress and ship annually from one thousand to ten thousand birds a year. When I was in South Haven, Mass., we shipped about ten thousand ducks annually. I may say that the method I used in plucking birds was somewhat different to that which Mr. Jarvis described. We found that we could pluck a great number without taking a great deal of time. The method I followed was to stick them through the roof of the mouth and jugular. The

reason for doing this is that sometimes you can't make a good stick in the roof of the mouth. In case you do not do that the blood will follow through after the feathers and makes a very bad appearance, especially in ducks. We do not wait for them to cool before plucking. We stick a bird and put it between the knees with its wings behind its back and begin at once. I know of one man who could pick twelve an hour. I could not do that myself. The best I ever did was seven.

In mixing birds you make a great mistake, if for market purposes especially, where the crosses are not the same in color of skin. For instance, if Barred Plymouth Rocks are crossed with White Leghorns the result would be that you would get a few white and a few straw-colored eggs. Those men with whom I deal do not want those eggs. They do not want any straw colored eggs.

Dr. MILLS: How would it do to cross the breeds that lay white eggs?

Mr. GRAHAM: That would do all right. Cross the breeds that lay white eggs and that have the same color of skin. By crossing a yellow fleshed fowl with a white fleshed one, you get another mixture of color.

I find a great difficulty in selecting male birds to introduce new blood, and get the flesh of a bright yellow color. I will give you an instance. I shipped Plymouth Rocks of my own breeding to a man this fall. I sent another gentleman's fowls along with mine which were of a lighter yellow color. There was a difference in price of two cents per pound when we got the returns.

In finishing birds for market, considerable difference is made in feeding white or yellow corn. Yellow corn has a tendency to make a yellower flesh than white corn. It is sometimes better to market poultry for broilers than for roasters. To give an example: I had two hundred birds; on one hundred broilers I realized 40 cents apiece, clear of all expenses. For the others, which I sold as roasters, I realized 15 cents each. So you see there was a great deal more money for me in selling birds as broilers. Do not have too many houses and yards, and keep down the expenses. When I first went into the business I had a little difficulty in getting sale. This year I had three different houses in Montreal write wanting to know if I was in the business. I wrote them I was, and had fifteen hundred broilers on hand. I have likewise had some experience in regard to the sale of eggs. Only last week I had two men enquire about the purchase of eggs throughout the season. I never had a bad egg. I keep the male birds away from the hens, except when breeding. After harvest this year, I had about five hundred fowls out in the fields on the farm. I did not feed anything. All they got was what they picked up themselves, and they did as well as any fowls I ever raised.

Mr. DUFF: In plucking fowl, do you pluck towards the head or tail?

Mr. GRAHAM: I start at the breast and pluck towards the head. I leave part of the wing on, and do not pluck the feathers near the head.

Dr. MILLS: Why not?

Mr. GRAHAM: People want them on.

A MEMBER: In plucking, do you draw the way the feathers lie on the fowl?

Mr. GRAHAM: No, the opposite way. Always pluck dry.

Dr. MILLS: What do you mean by plucking them dry?

Mr. GRAHAM: I mean, not to scald them—stick and pick immediately.

A MEMBER: Do you take a handful of feathers at once?

Mr. GRAHAM: Just as many as I can hold conveniently.

Dr. MILLS: Do you use any incubators?

Mr. GRAHAM: Yes; one of Mr. Meyer's and two Monarchs.

Dr. MILLS: Are you successful?

Mr. GRAHAM: I am in this way; I can take one hen and hatch a larger percentage under that hen than I can with an incubator, but with large numbers the incubator will

give a better hatch. In conducting the business extensively, with five or six hundred hens setting, they will fight and smash a great many eggs. The food would cost a great deal for such a large number of hens, and you are out all the eggs they would lay during that period. You cannot always get them to set when you want them. With an incubator all you want is a little oil, start it going and you are all right. The best hatch I ever had was eighty-nine per cent.

Dr. MILLS: What is the average?

Mr. GRAHAM: About seventy-five per cent. I have lost two batches of duck eggs completely. I have no hesitation in saying it was thunder. I have watched them very carefully and am of the opinion that the thunder was the cause of it. I do not know whether there would be any difference in this with the machines as compared with the hens. Last spring I had a lot of duck eggs in the Monarch machine, three hundred eggs were chipped in the morning. Along in the afternoon a heavy thunder storm came on and every bird died in the shells that were chipped.

A MEMBER: How do you manage to keep old birds from setting?

Mr. GRAHAM: We manage them all right. We have three different houses. I usually hold a couple of male birds over from season to season and keep them by themselves. I move the hen to another house, and if she still persists to set I put her in with a male bird.

Mr. DUFF: There was touched upon here to-day a matter in regard to keeping hens from setting. I can just simply add that I know of no better way than that suggested by Mr. Graham. There was also another subject touched upon, that was in regard to white and brown eggs. I think that the farmers of this country cater too much to their own personal tastes. I know of customers in Toronto who will pay five cents per dozen more for brown eggs than for white ones. I know customers in Montreal and Toronto who will pay five cents more for white shelled eggs. I am prepared to cater to their wishes, take their money and never wink an eye. I find a great deal of difference in fancy as to color, etc. I would like to add here, by way of parenthesis, that I do not consider any buttermaker who is catering to the public trade should consider his own tastes. If a customer wants four ounces of salt in his butter I would put it in. If he wants only three-quarters of an ounce it is my duty to give it to him. Salt is cheaper than butter. This is my opinion about catering to the public.

I have also been asked in regard to law restricting the sale of diseased poultry. I would just like to say that this disease is certainly a drawback to the poultry industry. Consumption, or tuberculosis, is a prevalent disease among poultry. I am sure most of you young men have poultry upon your farms, and it is certainly to the young men of the College that we all look for well kept and properly regulated farms. You will notice occasionally a bird getting very thin in flesh, quit laying, and the first thing you know she is dead. I will venture to say that in seven cases out of ten there is not a bit of flesh upon its bones, and usually the bird has died from consumption or tuberculosis. I sent a few diseased birds away to Montreal for experimental purposes, and at some future date shall send some to Professor Harrison to dissect. The bacteriologist in Montreal on examining the flesh, or what was left of the flesh on these birds, pronounced it to contain tuberculous germs, and to be decidedly unhealthful as food for human beings. That will show you that care should be taken in the marketing of poultry as in the case of cattle.

In regard to the matter of fertile and infertile eggs, I would say that I have conducted experiments for four years, and will make the broad statement that you cannot rot an infertile egg. You can dry it up and give it a bad flavor, but from the results of four years' experience, I know you cannot rot an infertile egg. The germ of life is put into an egg by the male bird, and by placing such an egg in an incubator or under a hen it will at once commence to form life. Supposing you have a large number of roosters running around with the hens—say fifty hens and fifteen or twenty cull roosters—and in the harvest time, you are all busy and neglect your duty, leaving eggs in the nest, the result is that the eggs laid have been heated up to 103 degrees for some time and that the germ of life has started in every egg. This is not so with the infertile

egg. You can start it even with an incubator. In four years' experiments, I have found that hens with no male bird with them will lay 17½ per cent. more eggs than when the male bird is there. Why it is I cannot say. It is so anyway. You gain the food that the roosters would consume and gain 17½ per cent. increase in eggs. Surely that is something to be considered.

I would like to see gentlemen who are connected with the experimental work of this Province have arrangements made with the Government whereby they would be able to give practical illustrations on dressing poultry, killing the birds right on the platform at meetings of this kind, and at Farmers' Institute meetings, and in this way show people the proper way to kill and dress poultry. I believe it would be a good thing, and one which would be very well thought of by the public at large. The poultry industry is bound to make great strides forward as the dairy industry has done. In the United States, the poultry industry is greater than the entire cotton crop and wheat crop, but in this country it is quite different. The people here neglect it. Here the attention is all directed towards horses, cattle and sheep. With all due respect to those who certainly have brought Canada to the fore, and have made a name for this country, I submit that the poultry industry in Ontario deserves far greater support than it has had in the past. I am pleased to be here. I trust it will not be the last time I shall be at the annual meeting of the Experimental Union. I wish all the students success in life, and merely suggest when they go home they will give the poultry some attention If you find they do not pay get rid of them, but, before you do so, give the poultry a fair chance. Give attention to your fowls and you will be well repaid. I thank you for the attention you have given me, and trust at some future time that I shall have the pleasure of meeting you again.

Mr. Meyers, Kossuth: I unhesitatingly say that no department of the farm will pay as well, if you will give the poultry as much attention as other stock. Of course I understand how a great many farmers cannot make anything out of poultry, because they cannot make anything out of sheep, pigs, and cattle. That is because they do not love the work. You must have a love for the business. I say, if a farmer is going to keep poultry at all in these hard times, he must keep it for profit. As a rule farmers have too little space for their fowls. They should keep quite a lot of straw in their houses so the fowls will have to work for their living. I was shown at one time what was called a patent feeder. The man put two or three bushels in at a time. This is an unprofitable way. The proper way to feed is in the natural way. Vegetables, roots, grass, and meat are splendid for fowls. Give them only sufficient food to give them a fair start in the morning. The food should be scattered with straw or some similar substance, so as to keep the fowls working. They do not need very much grain. It is very important that the fowls get meat, but it is sometimes rather difficult to get the meat for them. When I was down to Mr. Graham's place, he had the greater part of a horse. He said he had two or three on hand. Generally speaking, you cannot get meat as often as desirable.

A Member: What is the best kind of grain?

Mr. Meyers: I am feeding barley at the present time. There is a little danger in feeding oats. Barley is a very good thing. In winter time corn is a good food. I do not think any grain takes the place of wheat. There is a danger in getting too many fowls in a flock. Twenty-five, or fifty at the outside is about right. They require a good-sized room. For a flock of fifty hens you should have a place fifteen by twenty. The more room you have the better. The farmer should cull out all his old hens and those which will not lay. Do not keep anything over two years of age. Pullets and yearling hens are the only profitable ones. Late fence-corner chickens are of no use. In closing I wish to say that I would like to see farmers taking more interest in this question. We cannot afford to lose five cents on anything at the present time. We have got to make everything pay to make farming a success, and one of the greatest sources of profit lies with the poultry.

(No. 53).

Return to an Order of the House of the twenty-second day of December last for a Return of copies of papers, documents and all correspondence between any member or officer of the Government and any other person or persons in reference to Lot No. 13, Concession 3, Township of Stisted. Presented to the Legislature 12th January, 1898. Mr. *Langford*. *Not printed.*

(No. 54).

Return to an Order of the House of the twenty-ninth day of December last for a Return of copies of all correspondence between the Commissioner of Crown Lands, or any official of the Department, and any person or persons in reference to the cutting of timber under license or trespass in the tract of land known as "Coffin" Addition. Presented to the Legislature 12th January, 1898. Mr. *Miscampbell. Not printed.*

(No. 55).

Return to an Order of the House of the sixth day of January, 1898, for a Return shewing all payments made to Captain John Sullivan, an *employee* of the Government since January 1st, 1897, and shewing the time list since that date, where he was employed and amount received since that time. Such Return to state if paid by month, year, fees or day wages. Presented to the Legislature 12th January, 1898. Mr. *Reid* (Addington). *Not printed.*

REPORT

OF THE

SECRETARY AND REGISTRAR

OF THE

PROVINCE OF ONTARIO

FOR THE YEAR ENDING THE 31ST DAY OF DECEMBER,

1897.

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO.

TORONTO:

WARWICK BRO'S & RUTTER, PRINTERS AND BOOKBINDERS, 68 AND 70 FRONT STREET, WEST.

1898.

REPORT

OF THE

SECRETARY AND REGISTRAR

OF THE

PROVINCE OF ONTARIO

FOR THE YEAR ENDING 31ST DECEMBER, 1897.

To the Honourable Sir Oliver Mowat, Knight Grand Cross of the Most Honourable Order of St. Michael and St. George, Member of the Queen's Privy Council for Canada and Lieutenant-Governor of the Province of Ontario :—

MAY IT PLEASE YOUR HONOUR :

The undersigned begs respectfully to present to Your Honour the Report prepared with respect to the chief transactions of the Department of the Secretary and Registrar of the Province of Ontario, during the year ending the 31st day of December, 1897.

E. J. DAVIS,

Secretary and Registrar of the Province of Ontario.

PROVINCIAL SECRETARY'S OFFICE,
TORONTO, 12th January, 1898.

REPORT

OF THE

SECRETARY AND REGISTRAR

OF THE

PROVINCE OF ONTARIO

FOR THE YEAR ENDING THE THIRTY-FIRST DAY OF DECEMBER,

1897.

PROVINCIAL SECRETARY'S DEPARTMENT,

TORONTO, January 12th, 1898.

To the Honourable ELIHU JAMES DAVIS,

Secretary and Registrar of the Province of Ontario.

SIR,—The late date, down to which the prefatory matter in the immediately preceding Report, that is, for the year 1896, was brought, seems to render unnecessary a lengthy statement for the past year. You will remember that the occasion of the date, to which the undersigned refers, was a desire to make some reference in the Report for 1896 to the action that had taken place with respect to the introduction and passage of The Ontario Companies' Act, which came into force on the 13th day of April, 1897, the date of prorogation, and the date of the said Report.

The following statistics, however, should be reported, in order to sustain the continuity existing between the reports which have for some years appeared with respect to the work of this Department.

The Secretary's Office Register, in which are entered all the new subjects which arise during any given year, indicates that during 1897 six thousand, four hundred and seventy-eight new matters came before you as Provincial Secretary for attention and consideration. Other sources of information show that during that period eleven thousand, eight hundred and sixteen communications, consisting of despatches, letters, telegrams, etc., were received; that fifteen thousand, two hundred and sixty-four communications of a like character were sent out, and that in respect of these and other matters two thousand, two hundred and ninety-eight references of fyles, etc., to

other Departments were made, and two thousand, six hundred and seventy-nine references and reports from other Departments were received and acted upon.

The following table deals with this branch of the report, consisting, as it does, of a statement, by months, of the work done in the Provincial Secretary's office :

TABLE OF CORRESPONDENCE, ETC., 1897.

Months.	Number of despatches, letters, telegrams, etc., received.	Number of despatches, letters, telegrams, etc., sent out	Number of references made to other departments.	Number of references received from other departments.	Fees received.
					$ c.
January	1,514	1,404	323	315	3,349 80
February	1,543	1,601	228	260	4,602 10
March	1,096	1,832	226	436	5,863 85
April	727	960	225	271	5,381 25
May	655	844	129	126	3,407 35
June	662	996	152	197	2,662 00
July	681	845	155	131	1,317 30
August	542	688	94	93	3,263 50
September	679	883	116	102	2,196 25
October	1,404	1,505	195	249	2,028 10
November	1,233	1,353	172	205	2,111 25
December	1,080	2,353	283	294	3,103 35
Totals	11,816	15,264	2,298	2,679	39,286 10

It will be observed that the fees for 1897 reached the very high total of thirty-nine thousand, two hundred and eighty-six dollars, or more than twice the sum received for the year 1896, itself a year during which the fees were some four thousand dollars in excess of the fees for 1895, the highest, in amount, which up to that year had been received. The large sum of nearly forty thousand dollars paid into the Provincial Secretary's office during 1897 was in a measure due to the Letters Patent issued for the purpose of incorporating mining companies. In most instances, the nominal capitals of these companies were fixed at sums which occasioned the payment to the Department of the highest fee charged for incorporation.

It is worthy of note that, under provisions of The Ontario Companies' Act, notices with respect to intended applications for incorporation by Letters Patent have almost entirely ceased to appear in *The Ontario Gazette*. For some years, it had been urged by applicants for incorporation and their solicitors that notice in *The Gazette* really served no useful purpose, and departmental experience seemed to indicate that such was the fact, inasmuch as no objection was ever taken to the incorporation of any company, except in so far as its proposed corporate name was concerned, and then largely, if not wholly, on

the ground that such name might conflict with some name already in use. Possibly, the objections, even on this ground, did not exceed one per centum. While The Ontario Companies' Act admits of the incorporation of companies, as a rule, without notice, an Order of His Honour the Lieutenant-Governor-in-Council, passed under one of its provisions, empowers you, whenever it is deemed to be proper in the public interest, to call for such notice in *The Gazette*, or otherwise, as appears to be prudent. It may be added that, with one exception, due to a special Act, no new notice has appeared in *The Gazette* since about the 15th of April, 1897, and that, though more companies than ever before, in the space of one year, were incorporated, in no instance has it appeared to be proper that public notice should be required.

The cessation of the appearance of public notices in *The Gazette* has, naturally, somewhat reduced the revenue of the Province from that publication. As the change in this respect was brought about in the interests of applicants, many of whom repeatedly stated that they would rather pay larger fees than wait, during the four weeks of notice, for incorporation, the subject of increasing the fees for Letters Patent, partly for the purpose of recouping the loss of revenue from *The Gazette*, and partly for the purpose of providing some additional revenue, is now under consideration, it having been pointed out that the fees charged elsewhere for similar services are considerably larger than those at present in force here.

During 1896, four hundred and one appointments to office, and four hundred public notices in respect of the incorporation of companies, etc., were gazetted. The Proclamations issued were in number nine, and embrace the following subjects:

1. Proclamation summoning the Legislative Assembly to meet on the 10th day of February, 1897, for the despatch of business.

2. Proclamation dissolving the County Court District of Middlesex and Lambton, and directing that the said Counties should thereafter be separated for the purposes of the Act respecting County Court Judges.

3. Proclamation dividing the North Ward of the Town of Berlin, in the County of Waterloo, into two Wards, to be called and known, respectively, as the North Ward and the Centre Ward.

4. Proclamation varying the date upon which should take effect the proclamation dissolving the County Court District of Middlesex and Lambton.

5. Proclamation re-dividing the Town of Rat Portage into four Wards, to be called Centre Ward, North Ward, South Ward and West Ward.

6. Proclamation annexing the Village of London West to the City of London upon the terms and conditions agreed to by their respective Municipal Councils.

7. Proclamation summoning the Legislative Assembly to meet on the 30th day of November, 1897, for the despatch of business.

8. Proclamation by His Honour the Honourable Sir Oliver Mowat, dated the 18th day of November, 1897, giving public notice that he had been appointed by His Excellency the Governor-General to be Lieutenant-Governor in and over the Province of Ontario, and that he had taken the prescribed oaths of office before His Excellency and in the presence of certain persons in the proclamation mentioned.

9. Proclamation declaring that the Revised Statutes of Ontario, 1897, would come into force and have effect as law on the 31st day of December, 1897.

Attached to this Report are the following appendices:

I. A Comparative Statement of the work done in the Provincial Secretary's Office during certain years, including 1897.

II. A Detailed Statement of the fees received and of the services rendered therefor by the Office during the year 1897.

III. An Alphabetical List of the Letters Patent and Supplementary Letters Patent, etc., granted subsequently to the 13th of April, 1897, when The Ontario Companies' Act came into force; the list for the earlier part of the year appeared in the Report for 1896

IV. A Synopsis of Returns to Addresses and Orders of the House presented to the Legislative Assembly during the Session of 1897.

V. The Annual Statement of the Deputy Provincial Registrar for 1897.

All of which is respectfully submitted.

G. E. Lunsden,
Assistant Secretary.

APPENDIX I.—Comparative Statement showing the work done in Provincial Secretary's Office during the years 1868, 1871, 1875, 1877, 1881, 1886, 1887, 1888, 1889, 1890, 1891, 1892, 1893, 1894, 1895, 1896 and 1897.

Work done.	1868.	1871.	1875.	1877.	1881.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	1896.	1897.
No. of Fyles, *vide* the Office Register	1,172	1,264	1,862	1,983	2,408	3,575	3,967	4,275	4,434	4,684	4,379	5,464	5,330	6,292	5,391	6,279	6,478
Letters received	2,107	1,690	3,289	3,162	4,162	6,097	9,613	10,626	11,027	11,502	12,648	14,109	13,928	14,320	13,754	13,472	11,816
Letters sent	1,667	1,280	3,326	2,358	3,756	5,734	9,227	13,458	12,887	12,882	13,573	15,233	14,761	17,812	13,595	17,385	15,264
References to other departments	481	912	1,642	1,528	1,790	2,899	2,369	2,948	2,743	3,159	3,013	2,670	2,636	2,669	4,044	2,877	2,298
Reports from other departments	256	470	966	1,232	1,395	2,689	1,786	2,760	2,909	3,317	2,685	2,614	2,621	2,616	4,394	3,467	2,679
Letters Patent of Incorporation	19	24	57	38	119	90	88	117	123	144	152	158	138	139	174	154	358
Supplementary Letters Patent	.....	.....	.....	.....	.....	14	10	19	8	13	16	21	21	11	14	10	18
Circulars	240	60	1,429	891	954	200	250	600	100	200	500	1,000	150	1,300	350	500	300
Declarations fyled	33	30	.....	....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Warrants *re* lunatics	34	195	160	256	359	394	360	430	360	382	544	410	396	364	592	365	440
Notarial certificates	48	72	37	131	76	93	122	110	107	127	105	86	108	97	131	113	128
Statutory returns	52	58	135	792	2,500	1,000	1,200	1,500	2,000	2,500	2,800	2,900	3,000	3,500	4,000	4,500	5,000
Marriage Act forms, etc., issued	.....	.....	28,422	25,384	27,882	26,254	29,378	29,911	29,712	27,934	28,300	28,659	28,965	37,459	27,098	30,945	34,045
Forms distributed to Sheriff's	.....	.. .	.....	.....	1,800	2,000	3,000	3,500	4,000	4,200	5,000	5,000	5,000	5,000	5,500	5,000	5,500
Other printed forms for municipal and other returns	.....	.....	....	.....	3,500	3,350	3,200	2,700	3,000	200	300	250	500	300	350	350	400
Commissions: Great and Privy Seals	135	190	139	170	275	227	214	534	359	400	297	328	305	338	308	185	225
Fees received	$1,938	$2,282	$5,688	$5,253	$7,021	$6,947	$7,711	$9,190	$8,801	$11,075	$9,193	$11,219	$13,204	$12,400	$14,384	$18,847	$39,286
Ontario Gazette:																	
Proclamations published	.....	16	21	33	17	13	4	13	19	11	10	6	6	6	7	6	9
Appointments gazetted	110	149	94	460	525	535	613	541	518	489	468	519	482	497	495	430	401
Public notices	47	58	80	36	127	119	121	150	141	166	179	107	189	163	196	177	400

APPENDIX II.—Detailed Statement of Fees Received

Services.	Authorized fee.	Number.	January.	Number.	February.	Number.	March.	Number.	April.	Number.	May.
	$ c.		$ c.		$ c.		$ c.		$ c.		$ c.
Commissions, Notaries Public	8 00	7	56 00	4	32 00	6	48 00	4	32 00	4	32 00
" Under the Great Seal	13 00	3	39 00	4	52 00	6	78 00	5	65 00	1	13 00
Notarial Certificates	1 00	10	10 00	5	5 00	12	12 00	25	25 00	15	15 00
Surrogate Court Certificates	2 00	6	12 00	2	4 00	..	.....	1	2 00	4	8 00
County Court Certificates	2 50	..	.....	..	.....	1	2 50	..	.....	..	.....
Superior Court Certificates	4 00	3	12 00	1	4 00	2	8 00	1	4 00	3	12 00
Releases	20 00	..	.....	..	.....	..	.....	.	.....	1	20 00
Orders in Council	12 00	..	.....	..	.....	..	.....	..	.....	..	.....
Police Magistrates (without salary)	5 00	..	.....	..	.....	2	10 00	2	10 00	1	5 00
Declarations	5 00	..	.....	..	.....	..	.....	..	.....	..	.....
Searches	....	..	3 70	..	5 10	..	5 35	.	2 25	..	7 05
Charters	.....	35	3,010 00	38	4,325 00	50	5,480 00	39	5,085 00	46	3,175 00
Marriage Licenses	....	..	207 10	..	175 00	..	220 00	..	156 00	..	120 30
Ferry Licenses	....	..	.....	..	.....	..	.....	..	.....	..	.....
Totals	.....	..	3,349 80	..	4,602 10	..	5,863 85	..	5,381 25	..	3,407 35

and the Services Rendered Therefor, 1897.

Number.	June.	Number.	July.	Number.	August.	Number.	September.	Number.	October.	Number.	November.	Number.	December.	Total number.	Total amount.
	$ c.		$ c.		$ c.		$ c.		$ c.		$ c.		$ c.		$ c.
12	96 00	4	32 00	3	24 00	7	56 00	8	64 00	3	24 00	8	64 00	70	560 00
3	39 00	5	65 00	3	39 00	2	26 00	3½	45 50	6	78 00	1	13 00	42½	552 50
8	8 00	13	13 00	2	2 00	11	11 00	5	5 00	14	14 00	8	8 00	128	123 00
3	6 00	1	2 00	1	2 00	3	6 00	4	8 00	2	4 00	..	.....	27	54 00
1	2 50	1	2 50	..	.....	..	.....	..	.....	..	.....	..	.....	3	7 50
..	.....	..	.....	..	.....	..	.....	2	8 00	1	4 00	..	.....	13	52 00
..	.....	..	.....	1	20 00	..	.....	..	.....	..	.....	..	.....	2	40 00
1	12 00	..	.....	..	.....	1	12 00	..	.....	1	12 00	1	12 00	4	48 00
1	5 00	1	5 00	..	.....	..	.....	..	.....	1	5 00	..	.....	8	40 00
1	5 00	1	5 00	..	.....	..	.....	..	.....	..	.....	..	.....	2	10 00
..	23 50	..	5 60	..	6 50	..	5 25	..	7 60	..	12 25	..	7 35	.....	91 50
22	2,210 00	17	970 00	30	2,960 00	25	1,830 00	24	1,665 00	20	1,700 00	33	2,635 00	379	35,015 00
..	255 00	..	202 20	..	195 00	..	250 00	..	225 00	..	258 00	..	364 00	.....	2,627 60
..	.....	1	15 00	1	15 00	..	.....	..	.....	..	.....	..	.....	2	30 00
..	2,662 00	..	1,317 30	..	3,263 00	..	2,196 25	..	2,028 10	..	2,111 25	..	3,103 35	.....	39,286 10

APPENDIX III.

List of Companies Incorporated from April 13 h 1897

Name of Company.	Date.	Capital.
A.		$
The Assaying and Smelting Company of Ontario, Limited	April 17th, 1897	75,000
The Aurora Mining and Development Company of Ontario, Limited	April 14th, 1897	1,000,000
The American Ball Nozzle Company of Toronto, Limited	May 12th, 1897	12,500
The Aylmer Electric and Manufacturing Company, Limited	May 12th, 1897	20,000
The Acton Trout Ponds Company, Limited	April 14th, 1897	20 000
The American Remedy Company of Ontario, Limited	May 20th, 1897	1,000,000
The A. D 2 Gold Mining Company of Ontario. Limited	Aug. 19th, 1897	500,000
The Arbuthnot Brothers' Company of Toronto, Limited	July 8th, 1897	45,000
The Aylesbury Dairy Company of Toronto, Limited	Aug. 12th, 1897	20,000
The Atkinson Marble and Granite Company of Simcoe, Limited	Oct. 6th, 1897	20,000
The Auxiliary Link and Novelty Company of Brantford, Limited.	Oct. 27th. 1897	2,000
B.		
The Brown and Wigle Company of Kingsville, Limited	April 14th, 1897	20,000
The Badgerow Scott Company, Limited	May 12th, 1897	25,000
The Bannockburn Gold Mining Company, Limited	April 17th, 1897	500,000
The Brantford Water Chute Company, Limited	May 27th, 1897	2,000
The Brantford Machine Tool Company, Limited	June 4th, 1897	150,000
The Ballard Electric and Machine Company, Limited	Aug. 12th, 1897	24,000
The Black Herbal Sanitarium Company of Toronto, Limited	Sept. 3rd, 1897	3,000
The Booth Waggon Company of Ontario, Limited	Sept. 25th. 1897	25,000
C.		
The Consolidated Gold Fields Development Company of Ontario, Limited	May 5th, 1887	2,000,000
The Canesda Mineral Water Company of Toronto, Limited	June 1st, 1897	2,000
The Combined Gold Mines Company of Ontario, Limited	June 21st, 1897	1,000,000
The Canister Machine Company, Limited	Sept. 7th, 1897	50,000
The Carriage Specialty Company of Toronto, Limited	Oct. 15th. 1897	20,000
The Campbellford Skating, Curling and Hockey Rink Company, Limited	Nov. 3rd, 1897	3,000
The Cumming Milling Company of Lyn, Limited	Nov. 3rd, 1897	75,000
The Cameron Island Mining and Development Company, Limited	Nov. 10th, 1897	250,000
The Cobourg Golf Club, Limited	Sept. 22nd, 1897	5 000
The Chippewa Gold Mining Company of Ontario, Limited	Sept. 25th, 1897	1,000,000
The Crystal Beach Electric Street Railway Company, Limited	Oct. 20th, 1897	45,000
The Comet Cycle Company, Limited	Dec. 15th, 1897	90,000
D.		
The Duvall Miller Manufacturing Company of Toronto, Limited	June 23rd, 1897	100,000
The Dundalk Curling Company, Limited	May 6th, 1897	6,000
The Diamond Jubilee Mineral Development Company of Ontario, Ltd.	May 12th, 1897	2,000,000
The Deseronto Milling Company, Limited	Nov. 18th, 1897	5,500
The Durham Woollen Mills Company, Limited	Aug. 12th, 1897	25,000
The Detroit and Hastings Mining and Milling Company. Limited	Nov. 3rd, 1897	2,000,000
The Diamond Park Mineral Water Company of Arnprior. Limited	Nov. 27th, 1897	20,000
The D. Pike Manufacturing Company, Limited	Dec. 15th, 1897	2,500
E.		
The Economic Gold and Nickel Pyritic Smelting Company of Sudbury, Limited	April 14th, 1897	300,000
The Eastern Townships Mining and Development Company of Ontario, Limited	June 23rd, 1897	500,000
The Elginfield Oil and Gas Developing Company of Dutton, Limited	May 5th, 1897	49,000
The Eureka Mining Company of Thesslan, Limited	July 8th, 1897	199,000
The Electrical Supply Company of Hamilton, Limited	July 7th, 1897	20,000
The Exeter Electric Light and Power Company, Limited	Sept. 3rd, 1897	15,000
The Essery Coal Company of Toronto, Limited	Sept. 15th, 1897	2,000

APPENDIX III.—List of Companies.—*Continued.*

Name of Company.	Date.	Capital.
F.		$
The Fort Erie and Bridgeburg Street Railway Company, Limited	April 14th, 1897	50,000
The Fort Frances Mining Company, Limited	May 26th, 1897	40,000
The Folger Hammond Mines Company, Limited	Oct. 7th, 1897	1,000,000
The Farmers' Hedge and Wire Fence Company of Ottawa, Limited	Sept. 15th, 1897	25,000
The Free Lance Publishing Company of Windsor, Limited	Dec. 30th, 1897	10,000
G.		
The Gold Cliff Mining and Development Company, Limited	April 17th, 1897	1,000,000
The Golden Star Mining and Exploration Company of Ontario, Limited.	May 26th, 1897	1,000,000
The Gold Quartz Free Milling, Mining and Development Company of Ontario, Limited	June 11th, 1897	2,000,000
The Golden Prince Mining and Development Company of Algoma, Ltd	May 5th, 1897	750,000
The Gold Horn Mining Company of Lennox and Addington, Limited	May 20th, 1897	45,000
The Golden Crown Mining Company of Ontario, Limited	June 23rd, 1897	950,000
The Gold King Mining of Toronto, Limited	July 7th, 1897	2,000,000
The Great Granite Gold Mining and Development Company of Ontario, Limited	Aug. 12th, 1897	5,000,000
The Gravel and Construction Company of Toronto, Limited	Sept. 9th, 1897	40,000
The Galley Homeopathic Remedy Company of Toronto, Limited	Sept. 15th, 1897	20,000
The Gold Creek Mines and Exploration Company of Ontario, Limited	Aug. 19th, 1897	500,000
The Garcia Gold Mining Company of London, Limited	Oct. 20th, 1897	50,000
The Gill Soap Company, Limited	Nov. 4th, 1897	3,000
The Gold Fields Company of Michipicoton, Limited	Nov. 27th, 1897	1,000,000
The Grand Calumet Mining Company of Ottawa, Limited	Dec. 1st, 1897	475,000
The Guelph Acetylene Gas Generator Company, Limited	Nov. 30th, 1897	1,000
H.		
The Hamilton Golf Club House Company, Limited	April 14th, 1897	2,000
The Hub Gold Mining and Development Company of Ontario, Limited.	April 17th, 1897	600,000
The Harriston Flax Manufacturing Company, Limited	May 20th, 1897	6,000
The Hamilton Iron Mining Company, Limited	May 12th, 1897	90,000
The Hastings Silver-Lead Mining Company, Limited	Aug. 12th, 1897	50,000
The Hiawatha Gold Mining and Milling Company of Ontario, Limited.	Aug. 12th, 1897	500,000
The Hamilton Acetylene Gas Machine Company, Limited	Dec. 18th, 1897	45,000
I.		
The Independent Cordage Company of Ontario, Limited	April 14th, 1897	150,000
The Indian Chief Gold Mining and Development Company of Ontario, Limited	April 14th, 1897	1,000,000
The Investors' Mining and Development Company of Toronto, Limited.	April 28th, 1897	1,000,000
The Intercolonial Deep Well Boring and Manufacturing Company of Petrolea, Limited	Aug. 12th, 1897	150,000
J.		
The Jackfish Bay Syndicate Mining Company, Limited	April 23rd, 1897	99,000
The J. M. Lowes Company of Toronto, Limited	May 6th, 1897	20,000
The John Dwyer Gold Mining Company of Toronto, Limited	July 23rd, 1897	450,000
The J. T. Brown Company, Limited	Aug. 21st, 1897	40,000
The Jubilee Grate Bar Company of Toronto, Limited	Dec. 1st, 1897	45,000
K.		
The Kabaskong Gold Mining Company of Ontario, Limited	April 21st, 1897	500,000
The Kent Mills Company, Limited	Oct. 6th, 1897	99,900
The Kobold Gold Mining Company of Ottawa, Limited	Nov. 12th, 1897	500,000
The Kemptaville Milling Company, Limited	Sept. 8th, 1897	30,000
The Klondyke and North West Mining Corporation of St. Thomas, Limited	Dec. 15th, 1897	475,000
The Klinck Brick and Stone Slab Company of Toronto, Limited	Dec. 6th, 1897	75,000

APPENDIX III.—List of Companies —*Continued.*

Name of Company.	Date.	Capital.
		$
L.		
The Lake Medad Portland Cement Company, Limited	April 21st, 1897	150,000
The Livingston Linseed Oil Company, Limited	Aug. 19th, 1897	200,000
The Laing Ritchie Company of Essex, Limited	Aug. 12th, 1897	40,000
The London Oil Company, Limited	Sept. 2nd, 1897	3,000
The London Biscuit and Confectionery Company, Limited	Dec. 3rd, 1897	10,000
M.		
The M. Campbell Fanning Mill Company of Chatham, Limited	April 14th, 1897	150,000
The Mandarin Gold Mining Company of Ontario, Limited	April 14th, 1897	300,000
The Mica and Mining Company of Ontario, Limited	April 28th, 1897	75,000
The Merchants Counter Check Book Company of Toronto, Limited	May 6th, 1897	90,000
The Mattawa Rink Company, Limited	May 12th, 1897	3,000
The Mines Selection Company of Toronto, Limited	May 26th, 1897	200,000
The Mineral King Mining and Development Company of Ontario, Limited	May 26th, 1897	77,000
The Montague Private Hospital Company of Toronto, Limited	June 1st, 1897	3,000
The Mohawk Mining Company of Rat Portag, Limited	April 21st, 1897	495,000
The Mathew Edwards Company of Ontario, Limited	April 21st, 1897	10,000
The McIntosh Granite and Marble Company, Limited	April 21st, 1897	48 000
The Manitou Gold Mining Company, Limited	May 12th, 1897	1,000,000
The Mines Investment Association of Ontario, Limited	June 1st, 1897	100,000
The Methuen Mining Company, Limited	June 1st, 1897	450,000
The Merchants Dyeing and Finishing Company, Limited	July 8th, 1897	180,000
The Mammoth Fair Company of Stouffville, Limited	July 14th, 1897	10,000
The Metal Shingle and Siding Company of Preston, Limited	July 23rd, 1897	10,000
The Macfarlane Wilson Company of Peterborough, Limited	Sept. 3rd, 1897	15,000
The Manufacturers and Merchants Cycle Company of Toronto, Limited.	Nov. 10th, 1897	24,000
The M. Doyle Fish Company of Toronto, Limited	July 7th, 1897	20,000
The Mine Centre Development Company, Limited	Aug. 27th, 1897	50,000
The McWillie Company of Toronto, Limited	Aug. 25th, 1897	40,000
The Mortimer Company, Limited	Sept. 15th, 1897	90,000
The Marks, Calvert, Dobie Company, Limited	Sept. 22nd, 1897	75,000
The Milner Walker Waggon Works Company of Walkerville, Limited	Oct. 6th, 1897	250,000
The Massey Station Telephone Company, Limited	Dec. 1st, 1897	500
N.		
The New Ontario Mining and Development Company, Limited	May 12th, 1897	50,000
The North Star Mining and Development Company of Toronto, Limited.	April 21st, 1897	5,000,000
The Niagara River and Lincoln Improvement Company, Limited	Oct. 29th, 1897	10,000
The Newmarket Curling Rink Company, Limited	Dec. 15th, 1897	3,000
O.		
The Ontario Reefs Mining and Development Company, Limited	April 17th, 1897	5,000,000
The Ontario Mercantile Agency Company, Limited	May 20th, 1897	2,000
The Osnabruck Centre Butter and Cheese Manufacturing Company, Limited	April 28th, 1897	2,500
The Ontario Prospectors Mining and Development Company, Limited	April 21st, 1897	1,000,000
The Ottawa Piano Company, Limited	June 11th, 1897	50,000
The Oriole Gold Company of Wabigoon and Saw Bill Lakes, Limited	July 21st, 1897	24,000
The Ontario Lithographic Stone and Mining Company, Limited	Nov. 10th, 1897	250,000
The Osnabruck Racing and Driving Association, Limited	Aug. 27th, 1897	1,000
The Oliver Lumber Company of Toronto, Limited	Sept. 25th, 1897	10,000
The Oxford Metallic Spring Tire Company, Limited	Oct. 7th, 1897	10,000
The Odorless Crematory Closet and General Heating Company of Hamilton, Limited	Oct. 27th, 1897	24,000
The Otisse Gold Mining Company of Schriber, Limited	Dec. 6th, 1897	1,000,000
The Ontario Realty Company, Limited	Dec. 9th, 1897	40,000
P.		
The Palmita Mining and Development Company of London, Limited	June 23rd, 1897	1,000,000
The Publishers' Syndicate of Ontario, Limited	May 6th, 1897	45,000
The Patent Cloth Board Company of Parry Sound, Limited	May 20th, 1897	30,000
The Peninsula Mining and Development Company of Ontario, Limited	June 23rd, 1897	900,000
The Paint, Oil and Chemical Company of Toronto, Limited	Aug. 12th, 1897	50 000
The Perrin Plough Company of Smith's Falls, Limited	Oct. 15th, 1897	9,000
The Provincial Trust Company of Ontario, Limited	Oct. 27th, 1897	1,000,000

APPENDIX III.—List of Companies.—*Continued.*

Name of Company.	Date.	Capital.
		$
The Pricilla Steam Yacht Company of Toronto, Limited	July 7th, 1897	3,500
The Pritchard Andrews Company of Ottawa, Limited	Aug. 12th, 1897	50,000
The Perth Flax and Cordage Company, Limited	Aug. 12th, 1897	30,000
The Perfection Knitting Company of St. Catharines, Limited	Oct. 15th, 1897	2,000
The Preston Curling and Skating Rink Company, Limited	Oct. 22nd, 1897	3,000
The Parkhill Basket Company, Limited	Dec. 3rd, 1897	5,000
The Perth Woollen Company, Limited	Dec. 1st, 1897	25,000
The Parkdale Curling Club, Limited	Dec. 15th, 1897	10,000
The Producers' Oil, Gas and Mining Company of Welland, Limited	Dec. 18th, 1897	10,000
Q.		
The Queenston Quarry Company, Limited	April 17th, 1897	50,000
R.		
The Rand Gold Mining Company of Wabigoon, Limited	May 5th, 1897	1,000,000
The Record Printing Company of Windsor, Limited	June 3rd, 1897	25,000
The Richard Simpson Company, Limited	April 17th, 1897	24,000
The Railroaders Gold Mining Company of Ontario, Limited	Sept. 2nd, 1897	500,000
The Rational Bicycle Seat Company of Toronto, Limited	July 7th, 1897	45,000
The Rex Cash Register Company of Toronto, Limited	Sept. 9th, 1897	10,000
The Royal Hotel Company of Hamilton, Limited	Nov. 27th, 1897	100,000
S.		
The Sanders Soule and Casselman Company, Limited	May 12th, 1897	50,000
The Soo Mining and Exploring Company of Algoma, Limited	June 23rd, 1897	99,000
The Sturgeon Falls Pulp Company, Limited	May 20th, 1897	160,000
The Standard Chemical Company of Toronto, Limited	June 1st, 1897	80,000
The St. Mary's Co-operative Creamery Company, Limited	June 8th, 1897	50,000
The Sloan Medicine Company of Hamilton, Limited	June 8th, 1897	20,000
The Sylvan Oil Company of Ontario, Limited	June 8th, 1897	350,000
The St. Margaret's College Company of Toronto, Limited	July 8th, 1897	40,000
The Strathroy Electric Company, Limited	Sept. 2nd, 1897	20,000
The Shallow Lake Woodwork Manufacturing Company, Limited	Oct. 15th, 1897	5,000
T.		
The Toronto Electrical Works Company, Limited	June 1st, 1897	30,000
The Toronto Lithographing Company, Limited	June 1st, 1897	195,000
The T. G. Rice Wire Manufacturing Company of Toronto, Limited	July 14th, 1897	3,000
The Toronto Brick Paving Company, Limited	Sept. 3rd, 1897	190,000
The Toronto Cold Storage Company, Limited	Oct. 6th, 1897	50,000
The Toronto Credit Rating Company, Limited	Aug. 12th, 1897	15,000
The Twentieth Century Churn Company of Toronto, Limited	Nov. 3rd, 1897	15,000
The Times Printing Company of Kingston, Limited	Dec. 1st, 1897	20,000
The Triangle Wheat Company of Ontario, Limited	Dec. 1st, 1897	24,000
The Thirdhope Carriage Company, Limited	Dec. 29th, 1897	100,000
U.		
The Union Jack Gold Mines Company of Foley, Ontario, Limited	Aug. 27th, 1897	150,000
V.		
The Victoria Diamond Jubilee Hospital Company of London, Limited	June 23rd, 1897	120,000
W.		
The Walkerville Printing Company, Limited	April 21st, 1897	3,000
The Windsor Review Company, Limited	April 14th, 1897	20,000
The Wahnapitae Navigation and Transportation Company, Limited	April 23rd, 1897	50,000
The Walker and McBean Company of Toronto, Limited	April 23rd, 1897	15,000
The W. A. Murray and Company, Limited	May 12th, 1897	600,000
The Windsor Specialty Manufacturing Company, Limited	May 20th, 1897	10,000
The Wingham Farmers' Flax Company, Limited	May 20th, 1897	7,500
The W. H. Billing Music Company of Toronto, Limited	June 3rd, 1897	3,000
The Wier Specialty Company of Toronto, Limited	June 23rd, 1896	3,000
The Willow Creek Gold Mining and Development Company of Brantford, Ontario, Limited	May 6th, 1897	99,000
The Wiarton Woollen Mills Company, Limited	May 5th, 1897	20,000

APPENDIX III.—List of Companies —*Continued.*

Name of Company.	Date.	Capital.
		$
The Williams Shoe Company of Galt, Limited	Sept. 8th, 1897	20,000
The Windsor Curling Rink Company, Limited	Oct. 15th, 1897	5,000
The Winnipeg Heater Company of Toronto, Limited	Sept. 2nd, 1897	24,000
The Westminster Company, Limited	Oct. 6th, 1897	50,000
The Walpole Ore Company, Limited	Oct. 15th, 1897	20,000
The Waterloo Rink Company, Limited	Dec. 15th, 1897	5,000
Y.		
The Yankee Doodle Mining Company of Toronto	Sept. 22nd, 1897	45,000
The Yellow Jacket Gold Mining Company of Seine River, Limited	Aug. 19th, 1897	90,000
The Yukon Mutual Mining and Exploring Company of Toronto, Limited	Oct. 6th, 1897	20,000
The Yukon Nugget Gold Mining and Exploration Company of Paris, Limited	Dec. 15th, 1897	250,000

SUPPLEMENTARY LETTERS PATENT.

Extending Powers, etc.

Name of Company.	Date.
The Central Canada Loan and Saving Company of Ontario (expunging the right to acquire land, etc)	May 6th, 1897.
The Ottawa Citizen Company, Limited	July 7th, 1897.
The Ottawa Gold Milling and Mining Company, Limited (expunging non-liability clause)	May 13th, 1897.
Limiting Time:	
Sable and Spanish Boom and Slide Company of Algoma, Limited	June 3rd, 1897.
Redividing Shares:	
The Church of England Publishing Company of Toronto, Limited	October 20th, 1897.
The Eagle Nest Gold Mining Company of Ontario, Limited	August 12th, 1897.
The Hamilton Thistle Club	June 23rd, 1897.

Increasing Capital.

Name of Company.	Date.	Capital Increase.	
		From—	To—
		$ c.	$ c.
The Cataract Power Company of Hamilton, Limited	May 6th, 1897.	99,900 00	250,000 00
The Foley Mines Company of Ontario, Limited	July 14th, 1897.	1,000,000 00	1,250,000 00
The Jackfish Bay Syndicate Mining Company, Limited, and sub-dividing	October 6th, 1897.	99,000 00	1,000,000 00
The Ontario Publishing Company, Limited	June 3rd, 1897.	20,000 00	50,000 00
The Ottawa Citizen Company, Limited	July 7th, 1897.	50,000 00	100,000 00
The Saw Bill Lake Gold Mining Company, Limited.	May 14th, 1897.	100,000 00	125,000 00
The Soho Cheese and Butter Manufacturing Company of Blenheim, Limited	October 27th, 1897.	2,500 00	3,000 00
The Toronto Bill Posting Company, Limited.	July 8th, 1897.	10,000 00	25,000 00
The Toronto and Western Mines Development Company, Limited	June 23rd, 1897	99,000 00	250,000 00
The Victor Oil Company, Limited	November 18th, 1897.	3,000 00	27,000 00
The Wallace Cheese and Butter Manufacturing Company	August 12th, 1897.	3,000 00	6,000 00

LICENSES TO EXTRA-PROVINCIAL COMPANIES

To do Business in Ontario, etc.

Name of Company.	Date.
The Central Agency, Limited	June 1st, 1897.
The Canada Venture Syndicate, Limited	July 20th, 1897.
The Canadian Pacific Exploration, Limited	August 19th, 1897.
The Canadian Gold Fields Syndicate, Limited. (To sell Stock)	September 8th, 1897.
The Little Butte Extension Mining Company. (To sell Stock)	October 29th, 1897.
The Little Butte Mining and Milling Company. (To sell Stock)	October 27th, 1897.
The North Western Ontario Exploration Company, Limited	December 3rd, 1897.
The Norton Manufacturing Company	December 18th, 1897.
Ontario, Limited	November 27th, 1897.
The White Bear Gold Mining and Milling Company. (To sell Stock)	September 22nd, 1897.

APPENDIX IV.

Synopsis of Returns to Addresses and Orders of the House presented to the Legislative Assembly during the Session 1897-8.

No.	Sessional Papers.	Subject.	Mover.
1	No. 44	Amount obtained from timber limits and timber dues and expenditure on roads and bridges in Oakley township	Mr. Langford.
2	52	Amounts paid in connection with Dominion-Provincial Arbitration and to whom.	Mr. Whitney.
3	53	Names of parties indebted for timber dues	Mr. Marter.
4	55	Stock on hand in Central Prison Industries, also outstanding account and net revenue	Mr. Marter.
5	58	Minutes of meeting of Educational Council	Mr. Whitney.
6	59	Respecting Issuers of Marriage Licenses and number of licenses issued	Mr. Ryerson.
7	60	Pupils at High Schools and Collegiate Institutes	Mr. Whitney
8	63	Respecting letters opened by E. Richardson	Mr. Kerns.
9	64	Withholding of money due to prize winners at Northern Exhibition held at Walkerton	Mr. Carnegie.
10	65	Respecting dismissal of John Dickenson, Bailiff	Mr. Ryerson.
11	66	Correspondence with reference to Game Laws of Ontario and Quebec	Mr. Barr.
12	68	Correspondence respecting conduct of Deputy Game Warden Smith	Mr. Ryerson.
13	70	Names of the applicants for investigation into the financial condition of Municipalities in the years 1890-96	Mr. Kerns.
14	71	Return from Police Court Clerks respecting the holding of Children's Courts	Mr. Howland.
15	73	Orders in Council referring to the sale of timber berths by tender.	Mr. Whitney.

APPENDIX V.

PROVINCIAL REGISTRAR'S OFFICE, ONTARIO,
TORONTO, 8th January, 1898.

SIR,—I have the honour to submit for your information a statement of the work done in the Registrar's Branch of the Provincial Secretary's Department from 1st January, 1897, to 31st December, 1897.

I have the honour to be, Sir,
Your obedient servant,

HON. E. J. DAVIS,
Provincial Secretary.

JOHN F. C. USSHER,
Deputy Registrar.

CONDENSED STATEMENT showing the work done in the Provincial Registrar's Office of the Department of the Provincial Secretary for the year 1897.

Documents.	Recorded and compared.	Indexed and compared.
Commissions under Great Seal	130	130
Commissions under Privy Seal	85	85
Special Commissions under Great Seal	4	4
Commissions of Inquiry	6	6
License Commissions	109	109
License Inspectors	3	3
Charters of Incorporation	345	345
Charters of Incorporation, Special	7	7
Supplementary Charters	18	18
Bonds and Covenants	30	30
Warrants removing Lunatics	256	256
Warrants transferring Lunatics	101	101
Warrants discharging Lunatics	83	83
Provincial Land Surveyor's Certificate	2	2
Crown Land Patents	1,202	1,202
Mining Leases	689	680
Special Deeds and Leases	15	15
Certificates of Incorporation, Friendly Societies	74	74
Copies of Documents	51	51
Circulars and Letters	450	450

In addition to the foregoing an Annual Return of all bonds and other securities recorded in this Department is prepared for the Legislative Assembly, and a Quarterly Return of all the lands is also sent to the Registrars of each County and District in which patents have issued, giving description of land patented, name of patentee, date, etc., also notice of all cancellations and surrenders of patents.

A large amount of work is also done in searching old records of land patents and records of charter commissions and other documents registered in the Department.

JOHN F. C. USSHER,
Deputy Registrar.

REPORT

OF THE

INSPECTOR OF REGISTRY OFFICES

FOR THE

PROVINCE OF ONTARIO

FOR THE YEAR

1897.

PRINTED BY ORDER OF
THE LEGISLATIVE ASSEMBLY OF ONTARIO.

TORONTO:
WARWICK BRO'S & RUTTER, PRINTERS, &c., 68 AND 70 FRONT STREET WEST.
1898.

REPORT

OF THE

INSPECTOR OF REGISTRY OFFICES

FOR

1897.

GUELPH, 28th February, 1898.

TO THE HONORABLE A. S. HARDY,
Attorney General,
Toronto.

SIR.—In presenting my Report as Inspector of Registry Offices for the past year, I have much pleasure in again bearing testimony to the generally efficient way in which the various Registry Offices of the Province are conducted. The Registrars, as a body, are faithful public servants. With scarcely an exception, they and their assistants not only keep their work well in hand, but they perform their important and onerous duties in an intelligent manner and with an increasing desire to fulfil the various requirements of the Registry Law.

The aggregate amounts of work done and of fees earned by Registrars, show slight decreases in 1897 as compared with 1896. For instance, in 1896 there were 109,323 instruments registered, while in 1897 there were 108,148 instruments registered, showing a falling off of 1,171 instruments. The gross fees earned by Registrars in 1897, including fees for searches, abstracts, &c., were $174,065.00 as against $182,551.00 in 1896. The net fees received by Registrars in 1897 were $90,944.90. In 1896, $104,338.00. In 1895, $106,750.00. The number of mortgages registered in 1897, was 28,989, and the aggregate amount of such mortgages was $42,508,941.00.

Full particulars of the fees and emoluments of the different Registrars and of the number of instruments registered and other matters, are given in the appendix to this Report.

I have to call attention to the expediency of restricting the use of the General Register to the registration of Wills, Letters of Administration and Powers of Attorney. At present the Act permits Deeds and Mortgages of land and other instruments affecting

lands without local description, to be registered in the General Register. Very few professional men, and probably no laymen search that book for such conveyances or mortgages. It may be a trap to catch the unwary. A general conveyance of lands, such as an assignment for the benefit of creditors, which is the commonest form of conveyance at present entered in the general register, even if it contains no local description, could, by some change in the Act, be registered against lands by local description. It could be managed by requiring the person who registers the instrument to specify by Statutory Declaration the particular lands affected by the instrument, and against which he desires it to be registered. It is obviously opposed to the spirit of the registry law to permit a man to convey or mortgage his land by general description. A secret disposal of lands may be made by such a conveyance or mortgage, as if only entered in the General Register, it would, in all probability, for a time at least, escape detection or discovery.

In some respects the present scale of fees to registers is inadequate. Where a mortgage endorsed "Not to be registered in full" embraces land in different municipalities in the same Registry Division, there is no proper provision for extra remuneration, nor is there any proper fee provided for double or treble entries of a discharge of mortgage which applies to land in different municipalities. Certificates of Final Orders of Foreclosure, Vesting Orders, and the like, are all entitled to be registered for a general fee of fifty cents, no matter how lengthy they may be, except that there is provision for an increased fee of five cents per lot over four. Certificates of such orders have been registered extending over forty folios. The work involved in copying and entering these instruments is not fairly paid for by a fee of fifty cents. Such instruments have the effect of deeds, and the fees for registration of them should be upon a somewhat similar basis. I recommend these matters to your attention and that of the Legislature.

Accompanying this Report are notes of some of the decisions and opinions which I have given on registration questions, in connection with the performances of my duties, since my last Report.

I have the honor to be, Sir,
Your obedient servant,

DON. GUTHRIE,
Inspector, R. O.

NOTES OF DECISIONS BY DONALD GUTHRIE, Q.C., INSPECTOR OF REGISTRY OFFICES.

Registration of Partnerships—Fees for Searching Index of Names.

Messrs. R. & Co. made enquiry from a Registrar asking who composed the firm of J. & Co. The Registrar says that the question was, "Who are the registered partners in the firm of L. M. J. & Co., Dry Goods, P——."

The firm was composed of eight individuals.

The Registrar considered that under section 16 of the Revised Statutes of Ontario, chapter 130, he was entitled to charge for a search of the firm name, ten cents, and for the eight individual names, ten cents each in addition to twenty five cents for a certificate, or in all $1.15. The applicants tendered the sum of thirty-five cents, which they thought the correct amount, that is, ten cents for a search in the firm index and twenty-five cents for a certificate.

Upon the foregoing state of facts, I have been requested to decide whether the Registrar is entitled to the fees he asks, or whether the applicants are right in their contention.

According to the form of schedule "C" attached to the Act, the firm index book contains the following information, or ought to contain it :

1. The style of the firm.

2. The names of the persons composing the firm, that is, the names of all persons composing the firm ; and

3. The date of filing the declaration.

Where, as here, the applicant furnishes the name of the firm and asks who compose the firm, it seems to me to be unnecessary to search the individual index, because the information required can be obtained from the firm index. Indeed, the firm index contains (the columns being transposed) the same information as the individual index. I think, therefore, it was not necessary, in order to furnish the information required in this case, that the individual index should be searched, and I decide this dispute in favor of the applicants, and consider the fee of thirty-five cents tendered by them is sufficient.

PLAN AMENDED BY JUDGE'S ORDER—MAY BE FILED WITHOUT CONSENT OF APPARENT OWNERS, AND MORTGAGEES BEING ENDORSED ON PLAN. FEES FOR SEARCHES AND ABSTRACTS IN CONNECTION WITH AMENDED PLAN NOT ALLOWED FOR UNLESS SPECIALLY ORDERED BY INSPECTOR—

A dispute as to fees has arisen between Messrs. B. & Co., solicitors, and a Registrar.

Under section 102 of the Registry Act, 1893, an amendment of plan 126, being a registered plan of a village, was ordered by the Judge of the County Court. The plan as then altered, and Judge's order, were sent to the Registrar for registration. The Registrar at first declined to register the altered plan because the parties whose names were attached to it did not appear by the registry books to be the owners of the land affected by the plan and because the consent in writing of persons who appeared by the registry books to be mortgagees of the property was not endorsed on the altered plan, signed by the mortgagees, and their names were not verified by affidavit.

The solicitors then registered documents removing these objections and the amending plan was filed. The Registrar also made an abstract of the instruments affecting the land and inserted same in the abstract index book. The solicitors had not required him to make this abstract. He considered the Registry Act required it and he states that he had a general order from Mr. Johnston, former inspector, directing him to prepare abstracts to be inserted in the abstract indexes in connection with all plans filed in future "not only new plans but also amending plans."

The fees charged by the Registrar for his services in this matter are as follows:

(*a*) For filing plan, $1; this is not disputed.

(*b*) For searches in connection with title, correspondence and postage, $1. This is disputed.

(*c*) For preparing abstract index, $4. This is disputed.

The Registrar claims the disputed fee (*b*), under the Act 59 Victoria, chapter 29, section 8, which provides "for searches as to the names of registered owners and as to mortgagees" under subsection 8 of section 96 of the Registry Act "in connection with the registration of any plan, $1." Subsection 8 is a subsection added to the section 96 of the Registry Act by section 3 of 59 Victoria, cap. 29, and is as follows: "The Registrar shall not receive or file any plan or map of a subdivision of any land, unless the person or the corporation by whom or on whose behalf the same is filed appears on the registry books to be the owner of the land subdivided by the plan, nor unless the consent in writing of all persons and corporations who appear by the said books to be mortgagees of the land is endorsed on the plan and signed by such person or the chief officer of such corporation and such signature are duly verified by affidavits."

The solicitors contend that in the case of an alteration ordered by a Judge at the instance of a person filing a plan or his assigns, the Registrar is bound to obey the Judge's order, it being presumed that the Judge has satisfied himself that the applicant is the person filing or his assigns, and they further contend that the alteration of a plan by Judge's order under section 102 is not a plan within the meaning of section 3, cap. 29, 59 Victoria.

The Registrar's view is that section 8 does apply to an amending plan filed under Judge's order. He argues that although a Judge may make an order directing alterations in a plan filed, his order cannot over-ride the requirements of section 3 of 59 Vic., and that notwithstanding the order it is still requisite that the parties at whose instance the order was made and the amending plan filed should appear by the registry books to be owner and that mortgagees should consent and signatures be verified.

Section 96 of the Registry Act 1893, provides for the registration of plans of surveys and subdivisions of lots and contains provisions as to what particulars of surveys the plans should contain and how they shall be verified, etc., but until 59 Vic. there was nothing to prevent a person who had only a limited interest in land or who had no interest, from filing a plan subdividing property into lots and laying out streets, etc, The purpose of 59 Vic. was to prevent a person who had only a limited title, or no apparent title, from filing a plan of a survey or subdivision of land into lots, thereby involving changes in the mode of keeping the abstract indexes and the descriptions in conveyances, ect.

Section 102 permits amendments and alterations of a plan or survey to be ordered at the instance of the person filing or registering the same or his assigns, by a Judge, on due application, and upon hearing all parties concerned, if he thinks it fit and just to make the order.

The mischief sought to be cured by 59 Victoria is not likely to arise where the Judge hears all parties concerned.

The subsection the Registrar relies on is a restriction upon the filing of plans subdividing existing lots.

The section permitting an alteration of such plans by Judge's order is to accomplish a different object, namely, to abolish the subdivisions in whole or in part, more especially as regards streets, and the Legislature in requiring the sanction of a Judge's order for such amendment to be made only after hearing all parties interested, has provided against alterations at the instance of improper parties or under circumstances not just to the parties interested. It could scarcely have been intended that the Registrar should be at liberty to virtually defeat the carrying out of a Judge's order by saying that the Judge had not heard all proper parties. Besides, the section of 59 Victoria on which the Registrar relies, requires the consent of all parties. The Judge may make the order under section 102, not only without the consent, but in direct opposition to the wishes of some parties interested. Section 102 provides for an order being made at the instance of the person who filed the original plan or his assigns. 59 Victoria only deals with an origina plan by a then apparent registered owner.

I am of opinion that a plan amended under section 102 may be filed upon the authority of the Judge's order alone and therefore I do not consider that the Registrar is entitled to insist on charging, before filing the amending plan, $1, under section 8 of 59 Victoria, for searches as to apparent owners or mortgagees.

The next question for my decision is, whether or not the Registrar is entitled to charge $4 for preparing the abstract for abstract index.

The Registrar claims this fee under section 99 of the Registry Act. Subsections 1, 3 and 4 do not apply here.

Subsection 6 is as follows: "For abstracts prepared for the purpose of plans hereafter registered the Registrar shall be entitled to receive from the persons registering such plans, the usual fees for preparing such abstracts, such fees to be paid in addition to the fees for registering such plan."

I take this to refer to abstracts which the Inspector has directed the Registrar to prepare.

The Registrar says the former Inspector directed him verbally to prepare abstracts in every case in connection with the filing of an original or amending plan.

It seems to me doubtful, assuming such a direction to have been given, whether it was such a direction as the statute contemplated. The Legislature in conferring a discretion on the Inspector evidently meant that he should exercise it on a consideration of the circumstances of each particular case. Besides, before this plan was filed the former Inspector had resigned the Inspectorship, and I had not given directions general or special in connection with this plan applicable to abstracts. I think from what the Registrar has stated that his work in proparing the abstract was useful and his charge reason-

able; but where the solicitors, as here, distinctly object to pay, upon the ground that subsections 4 and 6 do not apply because this is not the case of a subdivision, and at all events the Inspector did not direct the Registrar to prepare the abstract, I have to give my ruling and as I think the solicitors are, strictly speaking, in the right, I must hold that the charge cannot be insisted on.

I therefore decide this dispute in favor of the solicitors.

FEES FOR REGISTERING MECHANICS' LIENS AFFECTING MANY LOTS. FORM OF DISCHARGE OF MECHANICS' LIENS.

In the matter of Messrs. H. & Co, solicitors, and a Registrar.

A dispute as to fees between these parties has been referred to me.

The questions are as to the proper charges for registering liens under section 19, and discharges of the same liens under section 26 of the Mechanics' and Wage Earners Act, 1896, also as to the form of discharge of lien.

The liens affected, apparently, eighteen lots consisting of a block of land bounded by four streets in the City of . Under section 19, subsection 2, the fee for registration of a claim is twenty five cents, with a provision for an increased fee if several persons join in one claim. Under section 19 there is no provision for an increased fee in the case of a number of lots being embraced in one claim.

The Registrar charged ninety-five cents, evidently under the supposition that subsection 10 of section 111 of the Registry Act entitled him to do so. That subsection provides the fee for registration of a certificate of payment of a mortgage and for other certificates excepting discharges of manufacturers' liens and the like, including all entries and certificates, fifty cents; "but in case the said certificate affects more than four different lots or parcels of land the Registrar shall be allowed a fee of five cents for each lot in excess of four not exceeding in the whole $2, for the registration of such certificate."

But I do not think that a claim under the Mechanics' Lien Act is a certificate within the meaning of subsection 10, and as the fee for registration of such a claim is specially provided by the Mechanics' Lien Act and there is no provision in that Act for an increased fee where the claim affects a number of lots, I do not consider the Registrar was entitled to charge more than twenty-five cents for registering the claim, nor do I think that the Registrar was entitled under section 26 of the Mechanics' Lien Act, to more than twenty-five cents for registering the discharge of lien claim. It is expressly provided that the fees for a discharge shall be the same as for registration of a claim of lien.

The fee in a case like the one before me, where the lien affects eighteen lots, is inadequate, and I think it probable that if the attention of the Legislature was called to this case, which may be a common one, provision would be made for an increased fee as in subsection 10 of section 111 of the Registry Act.

Then regarding the form of discharge, my opinion is also in favor of the view taken by the solicitors, namely, that the discharge is not required, under section 26 of the Mechanics' Lien Act, to contain a statement as to the registry number of the claim of lien. The lien to be discharged should in some way be identified. Here the date of registration was given, which would, I think, be sufficient.

I doubt, however, whether two or more liens can be discharged in one discharge.

FEES FOR REGISTRATION OF NOTICE BY SHERIFF OF SEIZURE OF MORTGAGE. RULING OF FORMER INSPECTOR. HOW FAR BINDING.

A question has been submitted to me for my decision which has arisen between Mr. S., Solicitor, and a Registrar.

The Sheriff of a county sent for registration a notice under section 2 of chapter 5, 56 Victoria, being a notice of seizure of the interest of the execution debtor in a mortgage.

The Registrar charges $1.40 for registration of the Sheriff's notice, and the Solicitor contends that he is only entitled to a fee of fifty cents.

The Registrar transmits to me a copy of the ruling of Mr. Johnston, my predecessor, as Inspector, as follows:

"It would appear that the fee for registering the notice under section 2 is the same as that for any other instrument. I have no doubt the intention was to make it fifty cents, but I do not think section 8 does this. I think until some ruling is shewn to the contrary, the fee would be $1.40."

In answer to this, the Solicitor submits that section 8 should be read as relating to section 2. He calls attention to the fact that Mr. Johnston admits that the intention of the Legislature was to make the fee fifty cents. He says, even if the Act is defective, justice can be done by the Inspector by his ruling, and the true intention of the Legislature effectuated. He asks for my decision on the point.

I think that I should follow any decision of my predecessor, so long as the same was not reversed, in any case where his ruling amounted to a decision after having heard both sides.

I have conferred with Mr. Johnston as to his ruling, and he is unable to say whether the Solicitors concerned in the case before him, argued the question or not; he thinks probably they did not, but they accepted his ruling.

Section 8 says, "For the registration of any certificate under this Act, the Registrar shall be entitled to a fee of fifty cents and for every notice of seizure under section 2 of this Act, the Sheriff shall be entitled to a fee of $1."

Under section 6, provision is made for the Sheriff giving a certificate upon a writ of execution expiring or being satisfied set aside or withdrawn and for the registration of such certificate.

On the whole, I think it is better, especially as the matter is by no means clear, to follow the opinion given by Mr. Johnston.

It has to be noted that section 8 makes a clear distinction between a certificate under the Act and the notice of seizure under section 2. There are certificates of discharge provided for, so that the first clause of section 8 may fairly be held to refer to them and the last clause expressly refers to the document signed by the Sheriff under section 2 as a "notice of seizure." It does not refer to it as a "certificate."

PLAN OR SKETCH ATTACHED TO A DEED DOES NOT REQUIRE TO BE SEPARATELY REGISTERED WHERE IT FORMS PART OF DEED AND IS ATTACHED TO EUCLIDATE DESCRIPTION.

Messrs. D. & Co., Solicitors, and a Registrar, have submitted to me for my decision the following statement:

The Solicitors present to the Registrar for registration a deed from a corporation to John M., the description therein of the conveyed land being as follows:

"All and singular that certain parcel or tract of land and premises situate lying and being in the said City of , being composed of that part of M street, formerly O street, in the said City, closed up by a by-law of the said corporation, passed by the City council of the said City, on the ninth day of July, 1894, and which part may be more particularly described as follows: that is to say, being that part of M street lying between N street and the bend on P street, bounded on the south by the northerly limit of street east of the bend produced to street and according to the plan made by the City Engineer in connection with the straightening of street and on file in his office in the said City, upon which plan the said part of street is colored blue and a duplicate of which plan is hereunto annexed."

The duplicate plan referred to is annexed to the deed and a copy of a portion of it, shewing the property conveyed, and the straightening of street, is thereunto attached.

The plan has never been registered as a plan in the Registry Office.

The Registrar contends that the deed refers to an unregistered plan and that as no instrument referring to such plan has ever been registered in respect of the same land, he cannot register the deed until the plan is registered as such.

See section 100, Registry Act of 1893.

Messrs. D. & Co. contend contra:

(1) That under section 96 of the Registry Act of 1893 plans required to be filed are those in which "the land is surveyed and subdivided for the purpose of being sold or conveyed in lots" and that the triangular piece of land referred to in said deed does not come under that description.

(2) That the plan which is annexed to the deed is incorporated into and forms part of the deed, therefore the fact of its being referred to in the description cannot be called "a reference to an unregistered plan" that it is a reference to an attached sketch, which, as above stated, is incorporated into the deed.

The description shows that the plan referred to in the deed was a plan, not of lots or subdivisions of lots, but simply a plan or sketch made by the City Engineer in connection with the straightening of street, showing the part opened and the part closed, in order to straighten the street. I do not think it is a plan within the meaning of section 100 of the Registry Act.

I treat the sketch as part of the deed, attached to it, to further elucidate the description of the triangular piece of land.

ASSIGNMENT OF MORTGAGE BY WAY OF MORTGAGE. MAY BE ENDORSED NOT TO BE REGISTERED IN FULL—

In the matter of a Registrar and Messrs. T. & Co., Solicitors.

A dispute as to fees between these parties has been referred to me.

An assignment of mortgage by way of mortgage, B to B, was registered in the Registry Office and the instrument is endorsed "mortgage," and the words following are endorsed on it, "Not to be registered in full, T. & Co., mortgagee's solicitors." The instrument has been submitted to me. It is an assignment of mortgage describing the mortgages and describing the parcels of land covered by the mortgages. Amongst the recitals there is one stating that the assignor had applied to the assignee for a loan of money on the security of the mortgages and that the assignee had agreed to make the loan and the assignment is made to secure the loan. The assignment contains a proviso for redemption upon payment by the assignor to the assignee of the loan, with interest, and upon such payment the assignor is to be entitled to a reassignment. There is a covenant by the assignor to pay the amount of the loan and interest. There are other usual covenants in such assignments, and there is also a power of sale in favor of the assignee upon default entitling the assignee to sell the mortgages and the mortgage debts.

The Registrar contends that the instrument is an assignment of mortgage and that he is entitled to the ordinary fees for registering an assignment, which would here be $2.75.

The solicitors contend that the instrument is a mortgage and that being endorsed "Not to be registered in full," under the statute, chapter 35, 57 Victoria, the Registrar is only entitled to a fee of $1 for registering the instrument.

I am of opinion that the contention of the solicitors is correct. The instrument is a mortgage of mortgages. The statute does not say that it shall only apply to original mortgages and not to derivative ones. This instrument has all the incidents of a mortgage. There is the right to redeem on the part of the mortgagor; the right to foreclosure on the part of the mortgagee, and other usual rights of mortgagors and mortgagees.

I decide this dispute in favor of the solicitors.

REGISTRATION OF PROBATE OF WILL WHERE WILL DOES NOT CONTAIN DEVISE OF LANDS WITHOUT LOCAL DESCRIPTION AND DOES CONTAIN DEVISE WITH LOCAL DESCRIPTION—NOT TO GO INTO GENERAL REGISTER.

A dispute has arisen between Registrar and Messrs. G. & Co., Solicitors, under the following circumstances :

A probate of the will of one F was sent for registration. The will contains a devise of lands with a local description, the land being in W , and the will ought therefore to be registered in the separate book for that township. It contains no devise of lands without local description. The question is, should it also be registered in the general register.

The Registrar thinks that as the probate of the will says that administration of all and singular the property of the deceased and any way concerning his will was granted by the Court to the executors, that the word "property" covers real estate and that the deceased may have acquired real estate subsequent to the date of the will and that the will therefore should be entered in the general register.

Where the will itself does not contain a devise, etc., which affects lands without local description, I do not think that the probate requires to be recorded in the general registrar. Double registration should not be required unless in cases where the law plainly so directs, and here I think the requirements of the registry law will be satisfied by the registration in the separate registrar.

I decide this dispute accordingly.

REGISTRATION OF WILL—CONTAINING DEVISE OF LANDS IN DIFFERENT MUNICIPALITIES. RIGHT TO REQUIRE REGISTRAR TO LIMIT REGISTRATION TO ONE MUNICIPALITY—DUTY OF REGISTRAR WHEN SUCH A REQUEST PREFERRED.

A difference has arisen between a Registrar and Mr. S., Barrister.

Mr. S. wished to registrar a probate of will which contains devises of lands in two separate Municipalities in . Mr. S. took the will to the Registry Office and asked the Registrar to register it in one of the Municipalties. On the day following, when he went back for the probate, the Registrar informed him that he felt he was in duty bound to register it in both Municipalities, and to charge fees accordingly. Mr. S. contends that this is not right, that he has the privilege, when leaving a will for registry, to require that it shall be registered in only one Municipality, although it affects lands in two.

The Registrar's view is that under section 64 of the Registry Act, 1893, where an instrument includes different lots of land situate in different Municipalities in the same County, he has no option to register it in one, but must register it in all the Municipalities, and he points out that subsection 2 of section 70, touching the registration of wills, supports his view. That subsection provides that where the copy, will or letter probate, etc., has attached to it when left or offered for registery, an affidavit or Statutory Declaration by the Executor or Administrator to the effect that after making the will the testator conveyed a part of the lands in the will described by local description, and that it was not intended or desired that the registration of the will should effect such land, and if in addition it appears by the registered entries respecting such land that the testator had parted with all his interest in and title to the land, the Registrar shall not register the copy or enter the will as an instrument affecting such land, nor shall he be entitled to any fees for registration and making entries and certificates in respect thereof, etc.

The Registrar states that in this case no affidavit or Statutary Declaration that the testator had conveyed the lands was attached to the probate, and he therefore felt bound to register the instrument in both Municipalities.

There is no other provision in the Act authorizing the person entering such an instrument for registry to limit the registration thereof, or to designate what particular books the instrument shall be registered in.

By the interpretation clause of the Act, section 2, subsection 1, the word "instrument" includes amongst other instruments, a will and probate of will. Section 64 provides for the registration of instruments which include different lots or parcels of land situate in different municipalities, into the Registry Book of each Municipality. Section 66 provides for the Registrar making an entry of instruments in the Abstract and Alphabetical Index Books, and entering the instrument in the Registry Book, that is as I understand it, the Registry Book of each separate Municipality in which there are lands as described in the instrument.

Were the contention of Mr. S. here to prevail, the provisions of subsection 2, of section 70 would be unnecessary.

Upon the whole, I consider the Registrar's view is the right one, and in the absence of an affidavit or Statutory Declaration under subsection 2 of section 70, I think it was the duty of the Registrar to register the instrument in the books of both Municipalities. I think it only right, however, to add that in my opinion it would have been better had the Registrar called Mr. S's attention at the time he preferred the request to limit the registration, to the view he now contends is the right one, because in all probability Mr. S. could, if his attention had been called to the matter, have furnished the affidavit or Statutory Declaration required.

If the Registrar intends to claim an additional fee for registering the will in the General Register, I will consider and decide that question. I express no opinion now on his right to such additional fee.

ASSIGNMENT OF SEVERAL MORTGAGES ENDORSED "NOT TO BE REGISTERED IN FULL," FEES FOR REGISTRATION.

A Registrar has referred to me for my decision a dispute between himself and Mr. G. a solicitor, which raises a novel question. The point is this : —

Mr. G registered an assignment of five mortgages. He endorsed it "Not to be registered in full", under 57 Vic. Cap. 35, Sec. 1, as amended by the recent Statute. The five mortgages assigned cover seven different parcels of land in four different Municipalities.

The Registrar contends, (1) That the Assignment not being an Assignment of one mortgage but of five separate mortgages, does not come within 57 Vic. and consequently he is entitled to the fees payable under the former law ; and (1) That even if not so entitled, he is in any case entitled to a fee of $1 for each mortgage assigned.

The Solicitor's contention is that he is entitled to have the instrument registered at the lower fee of $1.15 under subsection 2 of section 1 of 57 Vic.

He further says that in any case the very utmost fee the Registrar is entitled to is a fee of $5 treating the instrument as if there were five assignments.

The recent Act 60 Vic. Cap. 14, Sec. 16 amends 57 Vic. Cap. 35, Sec. 1, by adding a subsection thus, (5) "In this section "the word" Mortgagee "shall include the assignee of a mortgage, and "the word "Mortgage" shall include an assignment of a mortgage".

The Interpretation Act, Section 8, Subsection 14, enacts that words importing the singular number include more persons or things of the same kind than one and the converse, but by Sec. 7, that is subject to this exception, "Except in so far as the provision is inconsistent with the object and intent of the Act or the Interpretation which such provision would give to any word expression or clause is inconsistent with the context.

I take it the object and intent of the original Act, 57 Vic. was to enable a mortgagee or mortagees or his or their solicitor or solicitors or agent or agents to limit the registration of any particular mortgage and so to reduce the fees for registration thereof by an endorsement on that particular mortgage. This construction of the original Act 57 Vic. gives effect to Section 8, subsection 24, of the Interpretation Act, in so far as the mortgagee or the solicitor or agent of the mortgagee are concerned, and restrains its application under section 7 in so far as the instrument itself is concerned. In other words the section applies where the mortgage is made to one or more mortgagees or is endorsed by one or more solicitors for such mortgagee or mortgagees with reference, however, in each case to one particular mortgage.

So under the amending Act of last Session, the Act 57, Vic. should be read under the Interpretation Act thus—The Assignee or Assignees named in any assignment of a mortgage or the solicitor or solicitors, agent or agents of such assignee or assignees, may endorse &c."

It can scarcely be contended that under the amendment it was intended that several independent mortgagees of say several different mortgages could join together to assign all their separate mortgages by one instrument; that is reading it in the light of the Interpretation Act. No doubt it was intended that a single mortgagee or several mortgagees of one mortgage could assign that mortgage and could endorse it not to be registered in full.

Any difficulty in construing the recent amendment arises not from the language of the amendment itself, which plainly applies to an Assignment of a mortgage and not to an Assignment of several mortgages, but from the contention that the Interpretation Act requires us to construe the Amendment so as to make it apply to an assignment (but not to assignments) of a mortgage or mortgages. In other words, in that view the plural, in case of assignments, would not be included, but in case of mortgages it would. But

would not such a contention involve more, namely, that such an Assignment might be of several mortgages held in different rights by different parties? Yet no one would argue for such an interpretation of the Act.

My view is therefore, that the Act does not permit the limited endorsement so as to reducethe Registrar's fees as if it was an Assignment of one mortgage, where the Assignment is of more than one mortgage.

Then can such an endorsement on such an assignment be treated as a separate endorsement in respect of the assignment of each mortgage? that is, can it be treated, for the purposes of fees as if the endorsement was a separate endorsement in respect of the Assignment of each mortgage? If five separate assignments had been made, each could have been endorsed separately and the Registrar would have had to register each for the reduced fee. Does it make any substantial difference to him whether the endorsement is in respect of or applies to each assignment, when the assignment is effected by one instrument, or to each assignment where it is effected by five separate instruments? Here the intention of the Assignee was to avail himself of the benefit of the new Act and I think his intention should not be thwarted unless it is quite clear that the endorsement cannot be treated as an endorsement in respect of each assignment of each mortgage. On the whole, although I confess I am not free from doubt on this point, I incline to hold that the fees to which the Registrar is entitled here are fees as if five separate assignments had been made, one of each mortgage, and as if each assignment had been duly endorsed "Not to be registered in full".

I decide this dispute accordingly.

STATUTORY DISCHARGE OF MORTGAGES—ONLY ONE MORTGAGE SHOULD BE INCLUDED IN DISCHARGE.

Mr. C. has complained to me that a Registrar refused to register a certificate of discharge of mortgage because it included a discharge of more than one mortgage and also because the lands covered by the mortgages were not the same.

The discharge offered for registration comprised three several mortgages made to the same mortgagee. The first mortgage covers lot 239 only and the last two mortgages cover lots 239 and 240 in the Village of

Section 76 of the Registry Act makes special provision for the Statutory discharge of a mortgage.

Formerly mortgages were discharged by re-conveyance of the lands by the mortgagee to the mortgagor. The provisions, therefore, for the Statutory discharge are exceptional. The other sections of the Act to which Mr. C. refers me, namely, 40, 64 and 66 do not govern section 76.

The language of section 76 and of the form of Statutory discharge plainly apply to the case of one registered mortgage.

It is true that the Interpretation Act, section 8 ss 24 provides that words importing the singular number shall include more persons, parties or things of the same kind than one, but this is subject to certain exceptions. See section 7. The exceptions are, that this shall not apply in so far as subsection 24 is inconsistent with the intent and object of the part of the Registry Act in question, or with the context thereof.

Now the object and intention of section 76 of the Registry Act, was to provide a short and inexpensive form of discharge of a registered mortgage and full effect can be given to all the provisions of the Interpretation Act referred to by reading section 76, thus :

" Where a registered mortgage has been satisfied, the Registrar, on receiving a certificate executed by the mortgagee or mortgagees or if the mortgage has been assigned and the assignment or assignments registered, then executed by the assignee or assignees, or by such other person or persons as may be entitled by law to receive the money and to discharge the mortgage, etc.

The construction contended for by Mr. C., that the Act warrants the discharging of several mortgages by one certificate, would involve more than anyone can fairly argue was ever meant by the Legislature, namely, that any number of registered mortgages could be discharged in one certificate, even, I suppose, where the mortgagors were different parties, provided they were held by the same mortgagee or assignee, Perhaps also where held by different mortgagees or assignees.

I am of opinion that under section 76 only one registered mortgage can be discharged by the one certificate, and I decide this dispute in favor of the Registrar accordingly.

FEE FOR REGISTRATION DISCHARGE OF MORTGAGE ENDORSED "NOT TO BE REGISTERED IN FULL."—NO EXTRA CHARGE FOR EXHIBITING THE ORIGINAL MORTGAGE.

Mr. C. complains that in connection with the registration of two discharges of mortgage the Registrar has charged him ten cents each more than he ought to have charged. The Registrar charged sixty cents each.

The Registrar's view is that the discharges being of mortgages not registered in full, he had, in order to ascertain what lands were effected, as he could not find it from the Registers, to get out the original mortgages and exhibit them for the purpose of ascertaining what lands were affected by the mortgages, so as to make the proper entries in the abstract indexes.

While I admit that there is force in the Registrar's contention, I fail to see any provision for paying him for his trouble in looking out the original instruments to ascertain the lands affected.

Subsection 10 section 111 provides a fixed fee for registration of the certificate of payment of mortgage money, including all entries and certificates thereof fifty cents.

I take it that subsection nine, which provides for a fee of ten cents for exhibiting in the office, each original registered instrument, including search for same, does not apply to a Registrar looking at an original mortgage for the purpose above referred to. He has to register the discharge for a fixed fee and he must do what is necessary for that fee to enable him to make the necessary entries in the abstract index.

I therefore decide this dispute in favor of Mr. C.

CHARGES FOR SEARCHES AND ABSTRACT. REGISTRAR SHOULD NOT FURNISH ABSTRACT WHERE CERTIFICATE SUFFICIENT.

Mr. L. complains of a charge for searches made against him by a Registrar.

Mr. L. sent to the Registrar by mail, a deed made by one C. to him, and asked the Registrar to let him know if there was anything registered against the land described in this deed since mortgage Number 4856. In answer to this request the Registrar sent an abstract of title certifying that the following are correct extracts from the only *incumbrances*, (the printed word "instrument" being struck out and the word "incumbrances" written over it) recorded in this office, which mention or refer to the above described lands. Then under the printed columns in abstracts, the word "Nil" is written under the word instrument and repeated four times in different columns.

The Registrar charges for this, searches 95 cents, writing 40 cents, in all $1.35. The Registrar says that since No. 4856 there are eighteen enteries on the lot which, I presume, means the whole of Lot Number Seven, in the Second Concession of the Township of M. The instrument sent by Mr. L. covered merely a fifth of an acre of that lot. The Registrar claims that for those eighteen entries he is entitled to charge a search 25 cents including first four references, and five cents for every additional reference.

Mr. L. says that he does not consider the Registrar is entitled to so much as he has charged.

Assuming that the Registrar necessarily referred to the whole of the eighteen instruments registered on Lot No. 7 since No. 4856, and I understand from the Registrar's letter that he did necessarily refer to those eighteen instruments, then I think his charge of 95 cents for searches, is correct. I do not, however, think that the charge of 40 cents for writing or for an abstract is quite correct. Having found nothing recorded since No. 4856, my view is that the Registrar should have given a simple certificate to that effect, for which he would be entitled to charge 25 cents, making $1.20.

I desire to call the Registrar's attention to the Abstract, which appears to have been prepared by his deputy. The abstracts purports to give extracts from the only "incumbrances" recorded in the office. What Mr. L. desired was to know whether there was anything, not merely incumbrances, but any instruments recorded in the office since 4856, and it is doubtful whether the abstract furnished the information sought for.

My decision is that the Registrar should furnish a certificate to the effect that since No. 4856 there is no instrument recorded in his office affecting the part of Lot No. 7 in the 2nd Con., Township of M., which is described in instrument No. 5893, and that then he should receive 95 cents for the search and 25 cents for the certificate, in all $1 20, and I decide this dispute accordingly.

PLANS ATTACHED TO DEEDS TO ELUCIDATE DESCPIPTIONS AND WHICH DO NOT SUBDIVIDE PROPERTY INTO LOTS NEED NOT BE SEPARATELY REGISTERED, BUT ARE PARTS OF DEEDS.

A Registrar has referred a difference to me, existing between himself and Messrs. J. & Co., Barristers, touching the fees to be paid in connection with the registration of deeds of lands to Her Majesty the Queen, being lands purchased for canal purposes.

Two of the deeds which have given rise to the difference have been sent to me. They describe the lands purchased for canal purposes by metes and bounds and at the end of the description the following words are added: "The same being shown by the part bordered with pink on the plan hereto attached and which form part of this indenture." In the other deed similar words are used. The plans attached to the deeds show in pink ink the part of the land to be conveyed, and its dimensions being marked and lines to show its situation having regard to the adjacent lands, but the plan contains nothing else. It is not a subdivision of lots nor is it signed by anybody nor does it appear to be prepared by a surveyor. It is in no way verified as a plan of subdivision of lands is required to be verified; the plan appears to be attached to the deed simply to elucidate the description.

The Registrar conceives that he is entitled to an extra fee for registering the plan in addition to the ordinary fees for registering the deed, and he refers me to sections 96, 100 and 101 of the Registry Act 1893; but these sections have all reference to plans subdividing lots, which plans have to be upon a certain scale, have to be mounted in a particular way, have to be signed by the person registering the same, certified by a land surveyor in a particular form: the signatures on the plan have to be verified and under the amendment of 1896, plans have to be not only signed by the owners, but by mortgagees, etc. It is quite clear that these sketches attached to the deeds in question are not in any sense plans within the meaning of section 96 and the other sections. I think no extra fees are payable in respect of the registration thereof, but that they form parts of the instrument, and are to be registered as part of the deeds respectively and paid for accordingly.

I ought to mention that the Registrar has also referred me to chapter 39, section 5, Revised Statutes of Canada 1886, being an Act respecting expropriation of lands for public works of the Dominion, etc., but section 5 does not apply, except to cases when no proper deed or conveyance of the land to Her Majesty is made and executed. Here there are proper deeds and conveyances. Besides under that section the plan filed in connection with an expropriation has to be signed by the Minister, Deputy Minister, or Secretary of the Department, etc. The sketches attached to the deeds in question are not such plans as are referred to in this section.

FEES FOR SEARCHES WHERE ABSTRACT INDEX ONLY SEARCHED.—WHAT IS A "REFERENCE."—DUTY OF REGISTRAR WHERE INFORMATION AS TO MORTGAGES REQUIRED. REGISTRARS NOT TO EXPRESS OPINIONS ON TITLES.

A Registrar has referred me to a question which has arisen between himself and the Manager of a Bank, regarding some fees for searches.

The Bank Manager applied to the Registrar for information according to a printed slip headed "Information required with reference to the ownership of undermentioned lot." Then it specified lot 6, concession 7, Township of , owner "W P ." No. of acres owned, fifty; then follow the words, "mortgaged for" "when mortgaged" "to whom mortgaged" Registrar Date Fee

The Acting Registrar first sent the Bank Manager an abstract of the northeast quarter of lot No. 6 in the 7th concession of , being the part of lot 6 apparently belonging to the party named and charged $1.30 for searches and abstract. The Manager returned the abstract, saying that he did not want one but merely wished to have the memorandum filled in.

The Manager at first sent 25 cents for a search, which the Registrar had returned.

Afterwards the Bank Manager sent 50 cents, 25 cents for a search and 25 cents for a certificate. The Registrar then furnished a certificate that there were no mortgages against the northeast half of lot No. 6 in the 7th concession of , and he charged fees for searches, 60 cents, and certificate, 25 cents, or 85 cents in all, being 35 cents more than the Bank Manager remitted. The Registrar makes up these fees as follows:—Searches, first four references, 25 cents; next seven references, 35 cents; certificate, 25 cents.

I understand from the Registrar's explanation that though he searched eleven entries, he only did so in the abstract index book; that he did not examine the copies of instruments in the registers.

It has been held that a "reference" under section 111 of the Registry Act 1893, means a reference to the registry books, and if upon a search only the abstract index is referred to, it is not proper to charge as for a reference. Here there were no references either to the instruments or copies and therefore a fee for search of 25 cents is sufficient, in addition to 25 cents for certificate.

I think, therefore, that the fee which the Bank Manager paid of 50 cents is enough.

I do not wish to be understood as saying that when a Registrar is called upon to give a certificate as to mortgages on a particular lot, he is not entitled to look beyond the abstract index. If a Registrar, on such a requisition as that now before me, because the descriptions furnished require it or because in his experience he has found that a previous Registrar has not kept the abstract index with entire accuracy, or if for any other good reason he felt it right to refer to the instruments themselves, I should allow him in addition to the fee for search, a fee for any references he properly makes over four.

A Registrar should not express any opinion as to a title. I make this observation because in the printed slip sent by the Bank, headed "Information required," in some cases part of the information would be the name of the "owner" of the lot. The Registrar should not give any such information; it is sometimes very difficult to tell who is the "owner" of a lot and at all events it is not a Registrar's duty to give such a statement nor is it expedient that he should do so. He may give an abstract of any deed registered in favor of any person, but that would not, in itself, show that person was "owner."

The case is different where the number of a lot is given and the information asked is simply whether there are mortgages registered against the lot. Then the Registrar, when there are mortgages, should give an abstract in the usual abstract form, giving particulars regarding every instrument registered against the lot that appears to be a mortgage. Where there are no mortgages registered, then he may give a short certificate to that effect.

INSTRUMENT REGISTERED UNDER PROOF BY JUDGE'S ORDER—AFFIDAVITS ON WHICH ORDER GRANTED ENDORSED ON INSTRUMENTS—SHOULD THEY BE COPIED INTO THE REGISTER?

A Registrar has submitted a question for my decision.

An instrument was brought to his office for registration by Mr. L., a barrister. It was a deed proved for registration by a County Judge's certificate, under section 50 of the Registry Act, 1893, but in addition to the Judge's certificate there were written on the deed three affidavits, being the affidavits upon which the Judge granted his certificate. Mr. L. did not wish the affidavits to be registered, as he did not wish to pay anything extra for the registration of them.

The Registrar was in doubt as to whether he was bound to copy the affidavits into the registry books. The questions he submits are:

1. Is it necessary that the proof to satisfy the County Judge should be written on the document?

As to this, I answer, it is not necessary.

2. If the affidavits are written on the document, had the Registrar any right to omit copying them into the registry books?

This is the principal question submitted, and I find that Mr. L., in his answer, says that the Judge was of opinion that the affidavits had better be written on the back of the document so that the proof on which it was registered should be present with the document for all time. Mr. L. himself was of opinion that so long as he satisfied the Judge that he was entitled to register the instrument, and so long as he secured the Judge's certificate and registered it, the affidavits are useless. He thinks that probably the Judge considered it better to have them all together for the sake of compactness, and I suppose also for preservation of testimony.

Mr. L. further says that he considers it would be only necessary for the Registrar to copy the instrument and certificate into the register without copying the affidavits.

By section 61 of the Registry Act it is provided that all instruments which may be registered under the Act shall be registered at full length, including every certificate and affidavit accompanying the same.

Section 50 is the section which makes provision for the cases where the witnesses to an instrument are dead or out of the Province, etc., and it enacts that any person who is or claims to be interested in the registration of the instrument may make proof before the Judge of a County Court in Ontario of the execution of the instrument, and upon a certificate according to the form of Schedule I to the Act, endorsed on the instrument and signed by the Judge, that the Judge is satisfied by the proof adduced of the due execution of the instrument, the Registrar shall register the instrument and certificate. Schedule I is a form of certificate of a County Judge in lieu of affidavit of execution. It contemplates that the Judge should in his certificate "name the person producing the proof and state the evidence given." The evidence given here consisted of affidavits endorsed upon the instrument, and no doubt the certificate refers to these affidavits and virtually makes them part of the certificate. The Judge evidently deemed it expedient to preserve the evidence in that way.

I have come to the conclusion that both the certificate and affidavits were, under the circumstances here, properly copied into the register and should be paid for accordingly.

DISCHARGE OF MORTGAGE WHERE SAME ASSIGNED TO AN EXECUTRIX—NOT NECESSARY TO REGISTER WILL BEFORE REGISTERING DISCHARGE BY EXECUTOR.

A Registrar has referred to me a question which has arisen between himself and Mr. R., a barrister.

The circumstances are as follows :

A mortgage was given in 1894 by one P. to one B.

In 1895 B. died. His executors proved his will and the probate was registered in the Registry Office of the County in which he resided.

In 1896 B's executors assigned the mortgage to "H. K., of the Town of B., Widow, executrix of the last will and testament of S. K, deceased."

S. K. died in 1893 and his will was duly proved, but probate was not registered in the County where the mortgaged premises are situate.

A discharge of P's mortgage, signed by H. K. as executrix, is now presented to the Registrar of the County last referred to for registry.

The question arises, should the Registrar register this discharge without the probate of S. K.'s will being registered in his office ?

In answer to this question I have to say that in my opinion the Registrar should register the discharge without the probate of S. K.'s will being registered. H. K. is the assignee of the mortgage. There is a complete chain of title on record down to H. K. Her authority to receive the mortgage money and discharge the mortgage is based upon the assignment ; she is the assignee and claims title to the mortgage, not under the probate of the will of S. K., but by virtue of the deed of assignment to herself as executrix. The Registrar is mistaken in his view that the assignment is an assignment to the "Estate of S. K., deceased." It is an assignment probably for the benefit of that estate, but it is direct to the executrix.

The matter will more clearly be understood if, instead of an assignment of mortgage, we should regard it as a case of a direct mortgage made to "H. K., as executrix of the will of S. K." Such mortgages are very common and yet I have not heard of a contention that under the Act, 58 Vic., such mortgages could not be discharged by the mortgagee without recording probate of the will. Under section 4 of 58 Vic., H K. would be the mortgagee, and therefore that section would not apply.

I decide this dispute accordingly.

REGISTRATION OF PAPERS CONNECTED WITH THE EXERCISE OF POWERS OF SALE IN MORTGAGES.

Mr. L., a Barrister, has a dispute with a Registrar.

Mr. L. sent to the Registrar copies of a notice of exercising the power of sale in a mortgage; declarations of parties who performed the several services connected with the sale, advertising, etc., the Registrar's abstract of title, Sheriff's certificate, etc., all verified as true copies by affidavits.

Mr. L contends that all these papers are capable of registration under section 2, chap. 35, 57 Victoria.

The Registrar's contention is that under the Act referred to, only the notice of exercising the power of sale and the affidavits or declarations of service thereof are capable of registration, and he further points out that the proper course is to deposit these instruments under "The custody of Title Deeds Act."

Their views have been presented to me by both Mr. L. and the Registrar with much ability.

Section 2 of chap. 35, 57 Victoria, differs in some respects from sections 23 and 24 of chap. 102, R. S. O. In addition to the registration of the notice of sale it provides for the registration of every notice of exercising the power of sale in a mortgage, and it also provides what was not covered by R. S. O., that it shall not be necessary to copy the notice of affidavits or declarations attached thereto in any of the registers.

It appears to me that a notice of sale of lands under the provisions of "An Act respecting Mortgages," and the notice of exercising the power of sale practically refer to the same thing. See the form given in section 22, R. S. O., chap. 102, and which is also the form usually adopted by Solicitors, as a notice of exercising the power of sale in mortgages. Such a notice and proof of its service, is what is permitted to be registered under section 2 of chap. 35, 57 Victoria.

Mr. L. lays stress upon the fact that under section 2, it is provided that it shall not be necessary to copy the notices or *declarations or affidavits* attached thereto, in any of the registers. These words, "declarations or affidavits" refer, in my opinion, to the affidavit or declaration of service of the notice, registration of which is provided for. Often times more than one affidavit or declaration of service is attached to a notice, because the service has been effected upon different people at different places and by different persons. What is permitted to be registered is the notice itself, accompanied by proofs of its service, and then comes the express provision saying that it shall not be necessary to copy the notices or affidavits into the books. I think if the section intended that other papers connected with the exercising of a power of sale should be registered, such as the advertisment of sale, the auctioneer's affidavit, the Sheriff's certificate, and the like, it would not only have used apt words to include these, but would have made express provision for some description of proof of these other papers to accompany them for registry.

I therefore decide this matter in favor of the Registrar.

ASSIGNMENT OF LEASES HAVING LANDLORD'S CONSENT ATTACHED TO ASSIGNMENT OR ENDORSED THEREON.—CONSENTS ARE SEPARATE INSTRUMENTS.—ASSIGNMENT MAY BE REGISTERED WITHOUT REGISTERING ENDORSED CONSENT. FORM OF CERTIFICATE.

A question has arisen between Messrs. C. & Co. and a Registrar, upon the following circumstances :

Messrs. C. & Co. registered in two instances, assignments of leases having in the one case endorsed on the lease, the consent of the lessees, an Hospital to the assignment of the lease and in the other case, the consent of a municipal corporation, the latter consent being attached to the assignment of lease.

In the first case the consent states that it is to extend to that particular transfer only and it is not to be deemed or taken to be a waiver of the covenant not to assign or sublet without leave, and it is given subject to all the covenants, agreements, etc., contained in the original lease. The consent is signed by the chairman and secretary of the hospital trustees. In the second case the consent of the corporation states that it is not to be considered or construed to be a waiver of the covenant in the original lease, against assigning, and it is not to be taken to sanction the removal of any improvements on the premises, and further states that it is given upon the condition that no house or building of any kind shall be erected within a distance of 25 feet from the front or street line of the lot. This consent is executed by the Mayor under the corporate seal, and by the Treasurer, who is keeper of the city seal, and is approved by the City Solicitor under his signature. The execution of neither of the two consents is verified by affidavit. This is unnecessary for registration purposes in the case of the consent by the city as it is under their corporate seal.

The question in difference, is, whether such a consent is a separate instrument and to be paid for accordingly, or whether the Solicitors are entitled to do as they did here, mark the consent "not to be registered" and to have the assignment registered and paid for without having to pay for the registration of the consent.

The first point that the Solicitors make is that my predecessor held some time ago that when it was not required that the consent should be registered, parties registering the assignment could not be made to register the consent. I have endeavored to ascertain from Mr. Johnston whether he has any record of such a ruling, and find that he has no record or recollection of having given any formal decision on the point, and he states that he considers it is perfectly open to me to decide the question according to my own opinion.

The letters to me of the Solictors and the Registrar respectively, very fully and ably argue the questions at issue from their different points of view.

The Registrar contends that the consent is not part of the assignment, but is a separate instrument.

I think they are separate documents. These consents are not given by either of the parties to the assignments of lease, nor in one sense are they essential to the validity of the assignments, unless the leases are expressed in different terms from the way in which leases usually are expressed. For instance, in the Act relating to short forms of leases, a covenant against assigning or subletting without leave does not render *ipso facto* any assignment or subletting invalid ; it is optional with the lessor to set up forfeiture of the lease in the event of an assignment or sub-lease without his leave in writing, and he may waive that forfeiture or he may show his assent by a letter or telegram or any sort of writing ; so long as he does not choose to enforce his right to forfeiture the assignment stands good. No doubt the written consent is considered essential by parties advancing money on the security of the assignments, or parties purchasing the right of an assignee.

The Registrar thinks further that in making out an abstract of the assignment, he must set out the consent, and he considers the consent essential to the validity of the assignment. What I have already said bears in part on this contention. I think registration of the assignment without the consent is a good registration so far as the assignment is concerned.

The Registrar says in the case of the city lease assignment, if the solicitors do not wish to register the consent, they should detach it. In that I agree with him. I think that if he asked them to detach it, and they refused but insisted on leaving it, they ought to pay for its registry. This consent having the corporate seal, was verified for registration.

Regarding the consent of the Hospital Trustees, it was not verified for registration and it was endorsed on the assignment and therefore could not be separated from it. Respecting it, the Registrar contends that he could not register part of a document and he could not eliminate any portion of a document received by him. If he received it, he thinks it must be entered in the Abstract Index, and in fact fully entered, and therefore he ought to be paid a separate fee or extra fee in respect thereof.

I have already expressed my view concurring in one of the Registrar's contentions, that the consent is a document separate from the assignment and not part of it.

The solicitors were certainly entitled to register an assignment, and the question is, how could that in practice be managed when they did not wish to register the consent endorsed on the instrument and therefore not detachable, and when that consent was not proved for registration. It would not involve more trouble to the Registrar to keep the assignment with an endorsement than it would to keep one without an endorsement, if the consent need not be entered in his books, and it certainly would not take up more room.

Upon consideration, I have come to the conclusion that although the consent by the Hospital Trustees is a separate instrument, the solicitors, under the circumstances, ought to be permitted to require the Registrar to register the assignment without registering the consent. I think the Registrar, in such a case, could ignore the consent in making entries in his books, treating it as not registered, not verified, and not required to be registered. But it might be asked in such a case, how could the Registrar give a certificate of registration upon the instrument according to the Act? I see no reason why the Registrar, in giving a certificate of registration, should not modify the form, schedule J of the Registry Act, 1893, thus:—"I certify that the within assignment of lease (but not the consent purporting to be endorsed thereon) is duly registered, etc." One object of putting in these qualifying words, besides the important point of certifying to the actual fact, would be, that under section 63 of the Registry Act, where the certificate of registration is provided for, it is enacted that any registered instrument or certificate shall be received as *prima facie* evidence of the registration and of the due execution of the same. A certificate of registration without the qualifying words above suggested, might be misleading.

I am disposed to place such an interpretation on the Act as will, while giving effect to the intention of the Legislature, not interfere with endorsements on deeds or instruments that are found to be of convenience and advantage, in some respects, to the public; or that are put on in good faith and for reasonable purposes, and not for the purpose of evading payment of registry fees. What the Registrar has to look to is the instrument itself and the affidavits and certificates appended. The Registrar is not put to any extra trouble or inconvenience by reason of there being a consent endorsed on the instrument, nor does he assume any responsibility for it if he guards his certificate of registration in the way I have indicated.

I think, therefore, he ought to receive this assignment of hospital lease for registration, without requiring that the endorsed consent should also be registered.

SEARCH OF FEE BOOK TO ASCERTAIN WHETHER A DISCHARGE OF MORTGAGE HAD BEEN REGISTERED—A FEE THEREFOR MAY BE CLAIMED BY REGISTRAR.

Mr. C. complains of a charge of twenty-five cents for a search made against him by a Registrar.

It appears from Mr. C's statement that he had paid off a mortgage by giving a new mortgage. The discharge of the old mortgage was to be registered that day, and he says that instead of his going along with the solicitors to see that they registered this discharge, he went afterwards to the Registry Office and looked at the Fee Book to see if the discharge had been registered.

Mr. C. contends that there is no provision made by the Registry Act allowing a fee to the Registrar for examining a Fee Book; and in the absence of any such provision, he contends that the Registrar is not entitled to charge or collect any fee. He says that possibly he was not entitled to see the Fee Book, and by preventing him from so doing the Registrar might have forced him to examine the Abstract Index Book, but he says the Registrar did not do this, and he cannot see why the Registrar can collect any fee not allowed him by the Registry Act.

The Registrar's contention is that a Fee Book is a book giving information respecting transactions going through his office; and, as such, he is as much entitled to charge for a search of it as for the examining of any other Registry Office book.

The Fee Book, by Section 29 of the Registry Act, of 1893 is no doubt a public book; and under Section 27 I think a search might be made of it, at all events in respect of entries relating to this discharge of mortgage.

The Fee Book may contain sufficient information, both relating to instruments registered and to the lands affected by these instruments, to render it unnecessary for a person desiring information to search further. I am aware of many instances of Fee Books which show the numbers of the instruments registered, the dates of registry, their nature, the names of the parties and the lands affected by them, as well as the fees paid.

If it is one of the public registry books and contains information regarding instruments relating to the title of lands, can it fairly be said that because a person searching finds in this book all the information he happens to require relating to some instrument affecting lands, and he does not find it necessary to call for any other book, say the Abstract Index, that therefore he is not bound to pay any fee?

While a person searching is entitled to look at more than one book for one fee, it is frequently the case that he finds from one of the books, say the Abstract Index, all the information he requires, and he does not, therefore, require to look at the Registers or any other books. Can he say that because he does not look at all the books he was entitled to examine for one fee, therefore he should not pay any fee?

There may be a distinction between a search of the Fee Book for the purpose of ascertaining whether a particular instrument has been registered, and which is therefore, so far as it goes, a search of the title or part of the title to lands, and the case of a mere enquiry to learn from the Fee Book how much the registration of the instrument has cost.

Looking at the object of the search here, namely, to ascertain whether or not a certain instrument affecting lands had been registered, I think the charge for a search was not improper, and I rule accordingly.

REGISTRATION OF MAP—NOT NECESSARY TO VERIFY SURVEYOR'S SIGNATURE—PROVISIONS FOR REGISTRATION OF PLAN WITHIN THREE MONTHS ARE DIRECTORY MERELY—REGISTERS DO RIGHT TO POINT OUT WHAT THEY THINK IS ERRONEOUS.

A dispute has been referred to me which has arisen between Mr. W., a Land Surveyor, and a Registrar, touching the registration of a Map.

Mr. W. has made a plan of some property within the County, and the owner of it sent it to the Registry Office for registration. The Registrar refuses to register it, one of his reasons being that upon or accompanying the Map there was no affidavit proving the signature of the surveyor to the surveyor's certificate, Schedule O, Registry Act, 1893. This was the only matter at first, upon which the Surveyor desired my ruling, but the Registrar had other objections to the plan, which I have been asked to consider.

The others are, that the plan was not presented for registration within three months from the date of the survey; the plan being dated 8th of February, 1897, and having been tendered for registry 13th of November, 1897.

Another objection was, that six parties signed the plan as owners, but two of them do not appear by the registry books to have any title to the property subdivided.

There was still a further objection, that one of the lines in the plan is, according to the Registrar's view, wrongly described; it is designated as a side line between the east halves of lots 25 and 46, which the Registrar considers an impossible line.

Regarding the first objection by the Registrar, namely, that the surveyor's signature to the certificate should be verified by affidavit. I have examined subsection 5 of section 96 of the Registry Act, which is the part of the Act the Registrar relies upon to sustain the objection, and I think that the signature which is required to be verified by affidavit, under that subsection, is the signature of the person or chief officer of the corporation by whom or on whose behalf the plan is filed. The surveyor's certificate, as given in form O to the Registry Act, 1893, does not indicate that it should be witnessed. There are various forms of certificates given in the Schedules to the Act. Where a witness is required, it is indicated in the forms. Besides, the surveyor's certificate is itself required partly at least for verification. The practice in Registry Offices hitherto, generally, although not without exception, has been not to require an affidavit of the surveyor's signature to his certificate. Even when affidavits are put on, I do not think they have stated that the deponent knew the person representing himself to be a surveyor to be in fact a duly licensed surveyor. If we are to require more in the way of verification of the survey than the certificate of the surveyor, one would think we ought to require proof, not only of the fact that the signature is that of a person *representing* himself to be a surveyor, but some proof that he is one in fact. I think an affidavit to verify the surveyor's certificate is not required.

Regarding the next objection, namely, the one relating to the three months—I think the provisions of subsection 1, of section 96 requiring the person making a subdivision of land by survey, etc., within three months from the date of survey to file a plan, are directory merely, and I think the Registrar should not refuse a plan merely because it is dated more than three months prior to time of registry. Where a Registrar does register such a plan, its registration would not be invalid. There is no provision requiring the plan to be dated. The surveyor's certificate should itself be dated, but the form of certificate does not require that it shall state the date of the survey. Subsection 4 imposes penalties for each and every month a plan remains unregistered. If it could not be registered after three months, the penalties would be interminable.

I sustain the Registrar's view with regard to the third objection, namely, that while six parties signed the plan as owners, two of them do not appear in the books of the registry office to have any title to the property. I think under the Act of 1896 it is

necessary that these parties should appear to have title. I understand, however, that the solicitor who is acting for the parties wishing to file the plan, has promised to register the necessary title deeds showing title in the other two, and no doubt he will do so.

There remains to be considered one other objection, namely, that one of the lines in the plan is said to be wrongly described. The surveyor says it is not, as contended by the Registrar, an evident mistake. He put the lines there, he says, for the better identification of the property. He says he might have used some other words to describe the line in question, but he doubts if he could have made his meaning any plainer.

I do not consider this is an objection that the Registrar is entitled to urge, to the extent of making it a ground for refusing registration of the plan, although it is certainly a proper thing for him, where he considers there has been an error or mistake, to call the attention of the party to it. I desire to encourage such a course on the part of Registrars, for very frequently their vigilence leads to the detection and correction of errors in time, and prevents much future trouble. While I think, in this case, it is not a reason why registration should be refused I approve of the Registrar's conduct in calling attention to what he believed to be a mistake.

CERTIFICATE OF REGISTRATION OF FINAL ORDER OF FORECLOSURE—REGISTRAR ENTITLED TO A FEE OF 25 CENTS FOR FURNISHING SAME.

A question has arisen between a Registrar and Messrs. B. & Co., under the following circumstances :

Messrs. B. & Co. registered a certificate of final order of foreclosure and they asked the Registrar to put on the final order itself, which they presented to him for that purpose, a certificate of the fact of the registration of the certificate of final order in the registry office, so that they might have evidence of its registration in their own possession. The Registrar contends that if he was asked to furnish a certificate upon the final order, he was entitled to 25 cents for such certificate, in addition to the 50 cents for having registered the certificate of final order.

The Registrar bases his right to a charge of 25 cents for the certificate given out or furnished upon subsection 5 of section 111 of the Registry Act 1893.

Messrs. B. & Co. take the ground that subsection 10 of section 111 distinctly states that the fee of 50 cents is to be for registering, not only that certificate, but is to include all entries and certificates thereof. They urge that the certificates and entries last mentioned must include the certificate to be given out of the office. Their interpretation is that the word "entries" would cover the whole duty of the Registrar of registering inside his office, and that the certificates thereof would be the certificate to be endorsed on the final order itself of what he had done; the whole duty to be performed for 50 cents.

Subsection 5 of section 111, provides a fee of 25 cents "for each certificate *furnished* by the Registrar, except those made under subsections 1 and 4 of this section"

Subsection 1 of section 111 says : "For the necessary entries and certificate in registering every instrument, other than those hereinafter specially provided for, including among such certificates the certificate on the duplicate (if any), 40 cents and for registering every certificate other than those hereinafter specially provided for, $1."

It will be noticed that this subsection provides for two classes of certificates, namely, the necessary certificate in registering the instrument and also the certificate on the duplicate (if any).

The Registrar, under section 66, endorses a certificate of registration upon the court certificate of the vesting order; which, of course, he retains in the office; he also, under the same section, certifies the copy of the certificate entered in the register. He copies or enters also the certificate of vesting order in the register and enters it in the abstract index, and in the alphabetical index, and he makes a minute of registration in the margin of the register, which is expressly called an entry, by section 67. It seems to me these are certificates and entries within the meaning of the words in subsection 10, to which Messrs. B. & Co. refer and are "the certificates and entries" intended by that subsection to be included in the 50 cent fee.

The original vesting order is not a duplicate of the certificate of the vesting order.

Certificates of payment of mortgage money are specifically included in subsection 10; but I do not think it will be contended that for a fee of 50 cents, the Registrar is bound to furnish upon the mortgage, or separately, a certificate of the registration of the certificate of discharge of the mortgage.

When the registrar, at the request of a solicitor, endorses and delivers a certificate, upon the vesting order itself, of registration of a certificate thereof, he seems to me to *furnish*, within the very words of subsection 5, such a certificate as he is, by that subsection, entitled to charge a fee for.

I therefore decide this dispute in favor of the Registrar.

RIGHT OF PARTY TO WHOM ABSTRACT FURNISHED TO MAKE SEARCHES TO VERIFY ABSTRACT FOR SUCH SEARCHES REGISTRAR IS ENTITLED TO A FURTHER FEE.

A difference has arisen between Mr. M., a Barrister, and an Acting Registrar.

The case submitted to me is, as regards the facts, very simple. Mr. M. ordered an abstract from the Crown, of a piece of property, and he contends that he has the right, after he receives the abstract, to go to the Registry Office and see all copies of instruments referred to in the abstract, for the purpose of verifying the abstract, and that he can do so without further charge. His view is, that it is unjust that he should pay for an abstract and then pay to find out whether it is a correct one.

The Registrar's reply to this contention is, that he is held responsible for the correctness of his abstract, and that if the solicitor desires to verify it, that involves a further search for which the solicitor ought to pay.

When an abstract is ordered, the Registrar is responsible for its preparation and contents; he is bound to make it as full as the solicitor desires to have it, but I see no provision in the Registry Act for enabling the solicitor to verify the abstract as Mr. M. desires, without paying an extra fee. In the preparation of the abstract, the Registrar has to make searches of and examine books and documents, and from these searches and this examination, he prepares, verifies and certifies to the abstract.

I do not think the solicitor can, the next day, next week or next month, make searches for himself, putting the Registrar to the trouble of producing books, etc., in order that the solicitor may see that the abstract is correct, thus giving the Registrar much extra trouble, without further fee.

My decision, in this case, is in favor of the Registrar.

AN INSTRUMENT WHICH CONTAINS SPECIAL TRUSTS AND POWERS, ALTHOUGH IT IS ALSO A CHARGE ON LANDS AND AN ASSIGNMENT OF MORTGAGES, IS NOT AN INSTRUMENT WHICH MAY BE ENDORSED, "NOT TO BE REGISTERED IN FULL."

A difference has arisen between Messrs. K. & Co., Solicitors, and a Registrar, which has been referred to me for my decision.

The solicitors desire the Registrar to register as a mortgage marked "Not to be registered in full," a long and special instrument between a land company and certain trustees.

The question is, whether the instrument is a mortgage capable of being endorsed "Not to be registered in full," within the meaning of section 1, chap. 35, 57 Vic. (1894). The solicitors contend that the instrument is such a mortgage, and the Registrar contends that it is not.

As I do not consider the question involved is merely one of the amount of the Registrar's fees, but is one affecting the regularity of the registration, I do not enter upon the consideration of a difference between the parties on a question of fact, as to what took place between them when the instrument was tendered for registration.

So far as the instrument affects lands, it purports to charge all lands and premises, both freehold and leasehold, of the Company, set forth and described in the schedules annexed to the instrument, and all the mortgages and other securities belonging to the Company, set forth and described in the schedules, and the lands described in the mortgages and all other the lands and assets, both present and future, of the Company, with the payment to the trustees of the full amount payable by the Company to the trustees under clause three; but subject to the provisions and conditions set forth in the instrument.

It provides that the trustees shall hold the said lands, and other premises, upon the trusts thereinafter provided. The trusts upon which the trustees hold the land are, amongst others, to permit the Company, until notice be given to the Company by the trustees, to the contrary, to hold the lands and sell, dispose of and convert the same into money, to receive purchase money, and to receive the principal money arising from the sale of mortgages and the like, and there seem to be trusts as to what the company are to do with the money. The Company, also, in certain events, may convey lands and assign mortgages to purchasers, notwithstanding the charge, and the trustees authorize the Company to execute, in certain events, releases of lands, etc., from the charge, and the trustees make the Company their attorneys to so execute releases, and there is a sweeping clause protecting purchasers who pay their purchase money to the Company. These trusts enable the Company to sell and convert the lands into money, until the trustees shall stop them by giving the Company thirty days' notice, and then the trustees, without any further consent on the part of the Company, may enter upon and take possession of all the lands, property, mortgages and other assets of the Company, and sell the same and convert the same into money. It is also declared that the Company thereby nominate and appoint the trustees as the true and lawful attorneys of the Company, and in the name and under the seal of the Company to execute deeds, conveyances and assurances which may be necessary to convey and assure to the purchasers, and to execute assignments or discharges of mortgage and other releases; so that both parties have powers to sell and each make the others their attorneys to sell, etc. These and other clauses of this special instrument, make it not only a charge, but a trust, deed and power of attorney, to sell and convey lands, transfer and release mortgages, etc.

In the view I take of the instrument in question, I do not think it is necessary to decide whether or not a mere charge on lands is a "mortgage" within the meaning of section 1 of the Act of 1894. My opinion is that this special trust deed is more than a mere charge, and affects lands in such a way that I do not think it is an instrument which may be endorsed "Not to be registered in full" under the section referred to.

I therefore decide this dispute accordingly.

What Instruments may be Endorsed not to be Registered in Full. An Agreement for Annuities Charged on Land cannot be so Endorsed. Meaning of Word Mortgage in Registry Act.

A dispute has arisen between Messrs. R. & Co. and a Registrar as to whether or not a certain instrument, F. M. H. to T. W. and C. W., is a mortgage capable of being endorsed "Not to be registered in full," within the meaning of 57 Vic., Cap. 35.

The solicitors' contention is that it is such an instrument, and the Registrar's view is that it is not such an instrument.

A duplicate original of the instrument has been submitted to me. It is endorsed "Agreement," and is made by F. M. H. of the first part, T. W. of the second part, and C. W. of the third part. It recites an agreement between the parties that W. and his wife should grant the lands described in it to H. in consideration that the latter should pay to W. an annuity of $600 during his life, and should pay to Mrs. W., after the decease of her husband, an annuity during her life of $200, "both said annuities to be payable at the times and manner hereinafter described," and the lands to be charged with the payment of the annuities. Then it recites that in pursuance of the agreement W. and wife had conveyed the lands to H , and he had agreed to execute the agreement to carry out his part of the arrangement.

The operative part of the instrument is, first, a covenant by H. with W. and wife and each and both of them, that he will pay to W., during life, monthly the sum of fifty dollars, and to Mrs. W. monthly, after the death of W., $16 67. Then these words occur "and doth hereby charge and incumber with the payment of the said annuities and each and every part thereof, all and singular, etc." Then follows a description of the lands.

There are covenants by H. with W. and wife to pay taxes, and to pay certain mortgages then forming incumbrances upon the lands, and indemnify W. and wife from liability upon the mortgages, also during the lifetime of W. and wife and the survivor of them, to insure the buildings and keep them in good repair. There follows a proviso that if H. desires to obtain a new mortgage in substitution for the existing mortgage W. and wife will postpone their claims against the lands. There is a further proviso that upon default by H. for two months, that W. and wife or either of them, after one month's notice in writing, may enter into possession of the lands and receive the rents, make leases, and also sell and absolutely dispose of the lands and convey and assure the same to purchasers and execute deeds, etc., for the purpose.

The last clause is as follows :

"And it is hereby agreed by and between the parties hereto that *this agreement* shall be binding on and enure to the benefit of the said parties hereto and their and each of their respective heirs, executors, administrators and assigns."

In the instrument itself it is spoken of as an agreement, nowhere as a mortgage. No estate in the lands is by it conveyed to W. and wife.

In substance it is an instrument to secure payment of annuities charged upon lands, with personal covenants to pay the annuities and with other provisions to enforce payment of them upon default.

There is very little difference between it and an ordinary rent charge, except that this instrument gives no power of distress.

In a mortgage the mortgagor has a right to redeem and the mortgagee has a right to foreclose. Here there would be no estate to redeem, as no estate is conveyed. Upon payment or satisfaction of the annuities, there would be no estate to re convey. Neither is there any equity of redemption to be foreclosed.

The instrument provides for payment of two annuities to different persons, and is therefore a double charge. It is two charges, or, according to the solicitors' contention, two mortgages two separate mortgagees in one instrument; and if so, is such an instrument, even if a mortgage, within 57 Victoria?

Upon the death of the last survivor, the annuities being paid, the whole instrument would cease to operate. Strictly speaking, as no estate by the instrument passed out of H., it would not be necessary for him to obtain any re-conveyance or certificate of payment in the nature of a re-conveyance, in order to have his lands freed from the charge. No doubt it would be desirable for him to have something on record to show the death of both annuitants, and that up to the time of their death the annuities were paid; but would not proof of their death and an ordinary receipt or other evidence showing payment of the annuities be sufficient to satisfy any intending purchaser from H. that the charges were at an end?

I do not think this instrument is a mortgage according to the ordinary meaning of that word, but is it a mortgage within the Registry Act?

Section 2, subsection 1, which enumerates the instruments capable of registration, includes a mortgage, assignment of mortgage, certificate of discharge of mortgage, etc, and also every other instrument whereby lands may be *charged* or *encumbered*, etc.

Section 43 provides for a special affidavit for an instrument not purporting to convey lands, but which is given as a security for the payment of a debt for the price of goods.

Section 76 provides for the statutory certificate of discharge of mortgage and enacts that it shall be deemed a discharge of the mortgage and be as effectual in law as a re-conveyance to the mortgagor of his original estate.

Then special provision is made by section 82 for the release of instruments of the nature of those mentioned in section 43, that is, certain instruments which do not convey but do incumber lands. The lands affected thereby may be released therefrom by a special form of certificate, which has not the effect of a re-conveyance but is merely a release of the lands from the encumbrance. This goes to show that so far as the Registry Act is concerned, the word "mortgage" is used in the ordinary sense as an instrument which conveys land, and the discharge of a mortgage is an instrument which operates as a re conveyance.

But it is urged by the solicitors that this is a mortgage according to the interpretation clauses of the Act respecting Mortgages of Real Estate. As to this, aside from the point that the interpretation clause applies only to certain words as they occur in *that* Act, this instrument seems rather to come under subsection 5 of section 1 of that Act, and is what is there described as an "incumbrance." That subsection shows that while the word "incumbrance" includes a mortgage in fee or for a less estate (and this is not a mortgage in fee or for a less estate), the word "incumbrance" also includes a charge of an annuity or other annual sum, which appears to describe the agreement we have here. I think that the agreement in question is not a mortgage within the meaning of section 1 of chapter 35 of 57 Victoria, and is not an instrument which may be endorsed "Not to be registered in full." I decide this dispute in favor of the contention of the Registrar.

The duplicate original of the instrument submitted to me is not endorsed with the words "Not to be registered in full," but I do not decide the dispute on that ground.

REGISTRATION OF WILL IN BOTH GENERAL AND SEPARATE REGISTERS. REGISTRATION IN GENERAL REGISTRY OF COUNTY IN WHICH TESTATOR RESIDED RATHER TO BE FAVORED.

Messrs. D. & Co., Solicitors, sent the will of A. M. to a Registrar for registration, and the Registrar thought that the will required to be registered both in the general register and in the separate register for the Township. The Solicitors contend that it is unnecessary to register it in the general register, and that it is sufficient if it is registered in the separate register for the Township, as there is a local description of land contained in the will. A copy of the will has been submitted to me.

The testator devises and bequeaths all his real and personal estate in manner following :

A legacy of $100 to one son ; a farm in another county to another, subject to a legacy; several other farms in his own county, subject to legacies, to several other sons. Then he gives to his widow the use of his dwelling house for life, and after his wife's death, to a daughter for life

The residuary clause which gives rise to the present contention, then follows, thus : " All the residue of my estate not hereinbefore disposed of, I give devise and bequeath unto my wife, to be used by her if she may desire or deem it necessary or expedient in assisting my sons or any of them to pay the legacies hereinbefore charged against them."

The question is, whether in this will there is, thus : " A general devise affecting lands without local description," within the meaning of section 29 of the Registry Act 1893, so as to render it necessary to record this will in the general registry book as well as in the separate register.

If the testator had other lands not disposed of by the previous part of the will, this residuary devise would give them to his widow. In some wills the clauses preceding the residuary clause shew that the lands devised by local description were all the lands the testator had ; but there is no such indication—rather the reverse. He evidently considered he had estate other than what he had especially given ; whether that estate consisted of real or personal estate or both, the will does not show. As the residuary devise may effect lands without local description, I think on the whole, although not without doubt, this will should go into the general register of the county in which the testator resided. I resolve the doubt the more readily in favor of that book, because experience proves that is, under our present registry law, the most convenient book for the recording of wills.

I decide this dispute accordingly in favor of the Registrar.

FEES FOR REGISTRATION OF DEED IN FOUR ORIGINAL PARTS. — EXTRA CERTIFICATES AND EXTRA TROUBLE TO REGISTRAR.

A difference has arisen between Messrs. H. & Co., Solicitors, and a Registrar, as to the proper fees to which the Registrar is entitled in connection with the registration of a deed called the F deed which was executed and registered in four original parts.

The four parts, as first forwarded to the Registrar, were, after being compared by him, found to require some correction and were returned for that purpose; indeed they were twice compared by the Registrar at considerable loss of time to himself, and returned for correction.

The Registrar claims a fee for registering the deed, of $10.30, and he further claims treating two of the original parts as certified copies, the sums of $5.95 for each. The Solicitors do not dispute the charge of $10.30, but object to fees for copies, but they are willing to allow a fee of 25 cents for each of the certificates of registration on parts three and four of the original deed.

The Registrar's view is that he is entitled to charge for parts three and four as if they were certified copies furnished by him.

By section 61 of the Registry Act, 1893, when an instrument is executed in two or more original parts, the instrument is to be registered upon and by the delivery of one of such parts.

By section 63 of the same Act it is enacted, in case an instrument in two or more original parts is registered, the Registrar shall endorse upon each of such original parts a certificate of the registration in the form J to the Act.

By section 111, ss. 1 of the same Act, a fee of $1.40 is provided for registering such an instrument, including the certificate on the duplicate. There are provisions for an increased fee where the instrument exceeds seven folios, etc.

By ss. 5 of the same section, for each certificate furnished by the Registrar, except the certificate made under ss. 1 already referred to, the Registrar is allowed a fee of 25 cents.

I take it to be clear that the documents here are not certified copies. They are parts of an original deed and the certificate which the Registrar is required by section 63 to furnish, is a certificate of the registration of an original deed.

The fee under ss. 1 of section 111, includes the certificate on one of the parts given out by the Registrar, and the only provision for an additional fee on the third and fourth parts of this deed which the Registrar is required to certify, is the fee of 25 cents under ss. 5.

I therefore decide this dispute in favor of Messrs. H. & Co., and hold that the fees to which the Registrar is entitled are :—For registration of deed and certificate on one original part, $10.30; for certificates on parts three and four, 50 cents.

In addition, of course, to charge for postage, which charge is not disputed.

I think it right to observe, that as the Registrar spent much time and took a large amount of trouble in comparing the instruments, (which were lengthy) on different occasions, and pointing out the defects and corresponding with the Solicitors, I think the Solicitors should allow the Registrar what, as appears by the correspondence, they agreed to do, namely, a fee of $5.95 in addition to the registration fees as if for one certified copy.

Probably the courtesy of the Registrar in acting as he did, has also saved the Solicitors something in agency fees.

The Registrar is of opinion that under a former decision I made, reported in my Report for 1895, at page 17, he is entitled to charge his full fees for a copy of an instrument and certifying same, even if that copy is prepared by the Solicitor; provided he notifies the Solicitor of his intention so to charge.

The distinction, however, between that decision and the present is, that in that case the instrument certified was not one of the parts of the original instrument, but was a mere copy.

MORTGAGE ENDORSED "NOT TO BE REGISTERED IN FULL"—ENDORSEMENT MAY BE PRINTED.

A dispute has arisen as to whether, under 57 Vic., Cap. 35, Sec. 1, an endorsement on a mortgage "Not to be registered in full," may be printed upon the mortgage. The dispute is between Messrs. D. & Co. and a Registrar.

A mortgage was registered, endorsed in printed form "Not to be registered in full, D. & Co. Solicitors for the Company"; the Company being mortgagees.

The Registrar did not receive the mortgage from Messrs. D. & Co. but from a clerk or messenger from Mr. G. D. The Registrar says he had no knowledge for whom he was acting. Messrs. D. & Co. says Mr. D. was their agent. I think the presumption in such case should be that any party producing such a mortgage so endorsed is acting for the solicitors who had made or authorized the endorsement.

The Registrar further says that on the occasion of my inspection he and his Deputy understood me to say that the Statute did not authorize the endorsement to be printed, and that it must be written. They must have misunderstood me. I have often told Registrars that if the words were printed, without anything more on the mortgage to show that they were put on by the mortgagee or the solicitors or agent for the mortgagee, the endorsement would, in my opinion, be insufficient; but I never intended to say that the Statute required the endorsement to be in writing and that it would not be a compliance with the Statute were it printed. I have considered and have so informed Registrars, that there should be something on the mortgage itself, in addition to the mere words "Not to be registered in full," to show that this endorsement was duly authorized, in other words, put on by the mortgagee or by his solicitor or agent.

I think a printed endorsement sufficient, and accordingly decide this dispute in favor of the solicitors.

AN INSTRUMENT MERELY CHARGING LANDS WITH THE PAYMENT OF MONEY IS NOT A MORTGAGE WHICH MAY BE ENDORSED "NOT TO BE REGISTERED IN FULL."

Messrs. F. & Co, Solicitors, contend that a certain instrument dated 4th of December, 1897, executed by M. & B. M., and tendered for registration, is a mortgage, and that they are entitled to endorse the instrument "Not to be registered in full," under 57 Vic. Cap. 35, and to have it registered at the reduced fee.

The Acting Registrar disputes this contention and asserts that the instrument is not a mortgage within the meaning of the Act referred to.

The instrument is addressed to D. F., apparently in the shape of a letter and begins, "Dear Sir,—In consideration of Forty Dollars this day paid to us by you we hereby appoint and charge in your favor lots numbers thirteen on the east side of street in C's Survey, and the east half of lot one hundred and six on the south side of C street in M's Survey in , with the payment of such Forty Dollars and interest until paid at eight per cent. and the cost of preparing registration and discharge of these presents, the said Forty Dollars and interest to be paid out of the first proceeds arising from said premises, or not in any event later than six months from this date.

"Witness "I K " "M. M , L.S.
"B. M , L.S.

There is an affidavit by the witness, stating that she was personally present and did see the "charge" duly signed, etc. The instrument, when presented for registration, was endorsed "mortgage," "Not to be registered in full, F. & Co. Solicitors for mortgagees."

It is clear that no estate in the lands is by this instrument conveyed to Mr. F.

Under a mortgage, the mortgagor has a right to redeem and the mortgagee has a right to foreclose.

Mr. F. could not enforce this charge against the lands except by equitable proceedings to have the lands sold and the lien paid; he would have no right to eject under the instrument itself, nor is there any estate of the M's which would be forfeited at the end of six months in the event of default, as no estate is conveyed and there is here, strictly speaking, no right to redeem an estate as forfeited for default; upon payment or satisfaction of the $40 and interest, there would be no estate to reconvey neither is there any equity of redemption to be foreclosed.

I do not think this instrument is a mortgage according to the ordinary meaning of the word, but is it a mortgage within the meaning of the Registry Act?

I copy here part of my decision in another case somewhat similar:

"Section 2, subsection 1 of the Registry Act, which "enumerates the instruments capable of registration, includes a mortgage, assignment of mortgage, certificate of discharge of mortgage, etc., and also every other instrument whereby lands may be *charged* or *incumbered*, etc.

"Section 43 provides for a special affidavit for an instrument not purporting to convey lands, but which is given as a security for the payment of a debt for the price of goods, etc.

"Section 76 provides for the statutory certificate of discharge of mortgage and enacts that it shall be deemed a discharge of the mortgage and be as effectual in law as a reconveyance to the mortgagor of his original estate.

"Then special provision is made by section 82 for the Release of instruments of the nature of those mentioned in section 43, that is, certain instruments which do not convey but do encumber lands. The lands affected thereby may be released therefrom by a special form of certificate, which has not the effect of a conveyance, but is merely a Release of the lands from the incumbrance. This goes to show that so far as the Registry Act is concerned, the word "mortgage" is used in the ordinary sense as an instrument which operates as a reconveyance."

I think that the instrument in question is not a mortgage within the meaning of Section 1, Cap. 35, 57 Vic., and is not an instrument which could be endorsed "Not to be registered in full."

I decide this dispute in favor of the Registrar.

REGISTRATION OF MUNICIPAL BY-LAWS.—BY-LAW TO PROVIDE FOR ISSUE OF DEBENTURES FOR LOCAL IMPROVEMENTS SHOULD NOT BE ENTERED IN ABSTRACT INDEX.—FEE FOR REGISTRATION.

A dispute has been referred to me, between a Registrar and a municipal corporation, acting through it's solicitor.

The point of difference is, as to the registration of By-law No. 35 of the corporation, being "A by-law to provide for borrowing money by the issue of debentures secured by the local special rates on property fronting or abutting on ..... street, between ..... street and ....., in Ward One, for the cost of opening said street."

The by-law was left for registration under section 396 of the Municipal Act, R. S. O. 1897. The Registrar is of opinion that a charge is created by the by-law, which he is bound to note on all the lots affected by it, that is, to note in the ordinary Abstract Index. The Registrar is further of opinion that if he fails to note the by-law in the Abstract Index, he and his sureties would be liable. His view is that every form and character of charge against lands in his registry division, of which mention is made in any registered document or instrument, should and must be set forth against the lots in detail, so that subsequent purchasers and mortgagees may have due notice.

I have been favored with a statement of the views of the city solicitor in reply to the Registrar. Amongst other things he states that the by-law in question is a local improvement by-law upon the face of it—fixes a rate upon each foot of land from ..... to ..... street, excepting certain frontages which have been struck out by the Court of Revision or the County Judge upon an appeal to the Court or Judge. He states it is impossible for the Registrar to know upon which of these lots the charges under this by-law are to be made; that this can only be found out by a search in the City Clerk's office, showing the lots which are affected by the by-law. He says the by-law does not show any particular lot against which it is to be registered, and it can only be put in the book in which such by-laws are required to be entered and not noted in the Abstract Index. He further points out that it is not registration which makes the local improvement rate a charge upon the land. The charge is created by the Municipal Act, and the steps taken under it; the object of registration is to shorten the time for moving against the by-law.

By section 396 of the Municipal Act, R. S. O. 1897, it is enacted that subject to the provisions of section 398 of that Act, every by-law passed by any municipality for contracting any debt by the issue of debentures for a longer term than one year and for levying rates for the payment of such debts on the rateable property of the municipality, or any part thereof, shall be transmitted by the Municipal Clerk to the Registrar. Subsection 2 provides that the Registrar shall receive and file in his office and enter in the proper book, every by-law so transmitted to him. Subsection 4 provides that the copy so certified shall be open to public inspection and examination at all reasonable times and hours upon payment of the proper fees. Subsection 5 provides special fees both for registration and for searches. Subsection 3 is also worth noting, as it makes provision for the proof for registration.

The mode of registration is specially provided for; the inspection of the copy and the fees are special; in all these respects being different from the provisions of the Registry Act. Then by section 398 of the same Municipal Act, it is provided that it shall not be obligatory upon any city, etc., to register by-laws passed under the provisions of the Act relating to local improvements; but the same may be so registered at the option of the municipality, so that that section makes it plain that the local improvement by-law is a valid charge on lands without registration; although it is an advantage to the municipality to register, because registration, by virtue of section 400, may cure defects of substance or form either in the by-law itself or the time or manner of passing the same, and also in shortening the time within which an application may be made to

quash. In this Act there is no provision for entering the by-law in the Abstract Index. I take it the book referred to in subsection 2 of section 396, is a book specially for the entering of by-laws.

The Registry Act, section 2, subsection 1, expressly provides that the word "instrument" shall include a municipal road by-law, but does not mention any other by-law, and by section 86 of the Registry Act, R. S. O. 1897, express provision is made for the registration of every by-law passed since the 29th of March, 1873, or thereafter to be passed by any municipal council under the authority of which any street, road or highway has been opened upon any private property, that is to say, express provision that before the same becomes effectual in law, it shall be registered; and there are other provisions regarding road by-laws by subsection 2. Then by subsection 3 all by-laws whereby a village, town or city becomes incorporated or the boundaries of any municipality are enlarged, diminished or in any way altered, shall be registered.

No where in the Registry Act is there express provision for registering by-laws creating debts under the Municipal Act.

On comparing the Registry Act with the clauses of the Municipal Act to which I have referred, I feel satisfied that registration under the Municipal Act is a separate and distinct sort of registration from that under the Registry Act. One of the principal objects of registration of by-laws under the Municipal Act seems to be for the purpose of curing technical defects and limiting the time for an application to quash. These matters are of extreme importance to municipalities in enabling them to effect sales of the debentures by assuring purchasers of a title free from technical defects.

As the registration of the by-law in question is expressly provided for under the Municipal Act, the special registration fee fixed by that Act, is, I think, the only fee to which the Registrar is entitled in connectian with the registration of the by-law; so that if he were bound to note it against the various lots covered by the description in the by-law, he would not be entitled to any extra fee therefor.

In my opinion, however, he is not bound to enter or note it in the Abstract Index, and I decide this dispute accordingly.

FEES FOR ABSTRACTS OF TWO LOTS WHERE ENTRIES ARE NEARLY BUT NOT QUITE ALL IDENTICAL.

A question has arisen between Messrs. M. & Co., Solicitors, and a Registrar, as to charges made by the Registrar for an abstract of the south half of lot five in the fourth concession of .

This lot was patented as the east and west halves. To make the abstract of the south half as required, the Registrar prepared abstracts of the east and west halves, that is to say, two abstracts. The entries on the abstracts appear to be identical, with two exceptions. The lots were originally patented, one to A. S. and one to A. M. The entries relating to the patents, therefore, are different, and of course the deed from A. S. to A. M. is upon the abstract of one half lot and not upon the other. The solicitors think the Registrar should not charge double fees for searches, because by one search of each instrument he could ascertain (except in one instance) the particulars necessary to enable him to prepare both abstracts. They do not object to pay for writing two abstracts, prepared, as they contend, nearly altogether by means of one search.

I had occasion, in the year 1895, to consider a similar question, and I then held that the latter part of subsection four to section 111 of the Registry Act, 1893, did not apply, unless the entries on the lots were identical throughout, and therefore that as two abstracts were prepared, that involved a right on the part of the Registrar to charge for searches and for writing accordingly.

I think in this case the Registrar was, strictly speaking, entitled to make two separate abstracts, and to charge for searches accordingly, and being so entitled, the fees he has charged for each abstract are correct, namely :—

The south half of lot five in the 4th concession of (in so far as the same is part of the east half of lot five)	$3 45
And the south half of lot five in the 4th concession of (in so as the same is part of the east half of lot five).....	3 40
	$6 85

NOTES OF OPINIONS GIVEN BY DONALD GUTHRIE, Q.C., INSPECTOR OF REGISTRY OFFICES.

Error in Duplicate Deed Registered. Registrar Cannot give up Duplicate Registered. Suggestions for Correction of Error.

To , A Registrar.

I am in receipt of your letter of 3rd March.

I do not think you are at liberty to accede to the request of the party who wishes to return the duplicate of the deed which was registered March 4th, 1890, in exchange for the duplicate then registered and returned with the Registrar's certificate, nor do I think you can alter the abstract indexes and other books.

You may, from me, suggest to the party that it might be that a deed of confirmation could be obtained from the grantor to correct the error, or it might be that the duplicate which was returned by the then Registrar, with his certificate, may be now registered as an original deed, if it is accompanied by an affidavit of execution, but it would have to be left in the Registry Office.

In the latter case the grantee, however, could then get from you a certified copy.

Registration of Leases. Lease for less Term than 7 Years may be Registered but Registration not Necessary where Tenant has Actual Possession.

To , A Registrar.

In answer to your letter of this date I have to say that in my opinion section 39 of the Registry Act, 1893, means that it is not necessary, in order to give notice to subsequent purchasers or mortgagees of a lease for a term not exceeding seven years, that such lease should be registered, where the actual possession goes along with the lease but I think that such a lease is capable of registry if the parties see fit to require it to be registered.

The ordinary affidavit of execution does not contain any clause touching the actual possession, so that when tendered for registry there will probably be nothing in the affidavit to show that actual possession has gone along with the lease and therefore upon even the strictest interpretation of section 39 the instrument would be capable of registry; but my opinion proceeds upon the broader view first above mentioned.

WILL SHOULD NOT BE REGISTERED IN GENERAL REGISTER WHERE THERE IS DEVISE OF LANDS WITH—BUT NO DEVISE OF LANDS WITHOUT LOCAL DESCRIPTION.

To , A Registrar.

The case stated for my opinion in yours of the 12th inst, is as follows ;

" A will contains legacies of money which legacies are not charged upon any lands of the testator. There are in the same will devises of land with local description, but there is no devise of land without local description. "

The question submitted by you, is, whether it is or is not necessary that such a will should be registered, both in General Register and in the Separate Register for the Municipality.

In my opinion it is not necessary that such a will should be registered in the General Register ; it should be registered in the Register for the Séparate Municipality in wnich the lands described are situate.

WILL IN FRENCH LANGUAGE EXECUTED IN QUEBEC. REGISTRATION OF NOTARIAL COPY AND TRANSLATION.

To , A Registrar.

In answer to your letter of 17th regarding the registration of a will in the French language, executed in the Province of Quebec, the original being deposited with a Notary there and the proposal being to register an English translation of the Notarial copy, I beg to say that I think the requirements of the Registry law will be met by the following ;

A Notarial copy of the instrument is clearly capable of registration under section 60, of the Registry Act and a translation of it may be registered under the act, Chapter 22, 58 victoria, but there should also be an affidavit under subsection 3 of section 70, of the Registry Act of the death of the testator.

REGISTRATION OF MECHANIC'S LIEN WHERE SIGNED BY AGENT FOR LIEN HOLDER.

To A Solicitor.

I am in receipt of your favor of 23rd June. In my opinion the Registrar was right in accepting and registering the lien signed by you as agent for the lien holder.

Should a Registrar decline to register a lien and the subject come before me, I might have to give it further consideration, as under certain circumstances my opinion has the effect of a decision.

In now giving my opinion, therefore, that your view is substantially right and that the Registrar has acted according to my interpretation of the law, I have to point out that this opinion has not, under the Registry Act, the effect of a decision.

AFFIDAVIT OF EXECUTION SWORN IN ENGLAND BEFORE "A COMMISSIONER, ETC."

To A Registrar.

I answer to your letter I have to say that on examining the affidavit endorsed on the Discharge of Mortgage, it appears to have been made by a witness resident in England and to have been sworn before a gentleman there, who signs his name, "A Commissioner, etc." I take it we may assume that the gentleman who so signs his name is a Commissioner who is authorized to administer oaths in the Supreme Court of Judicature in England.

A Statutory Declaration Making Statements as to Alleged Payment of a Mortgage Cannot be Registered.

To A Registrar.

I am in receipt of your letter of 19th instant enclosing a copy of a Statutory Declaration of A B. relating to a certain mortgage registered in your office. You ask me whether it is necessary to enter this instrument on all the land described in the mortgage.

I do not see by what authority you can receive this instrument for registration. If you have received it for safe custody under the custody of Title Deeds Acts, see chapter 115 of the Revised Statutes of Ontario, you will find that under section 10 the last mentioned Act, the deposit of the document is not to be deemed a registration of it within the meaning of the Registry Act.

As at present advised, I do consider a Statutory Declaration, setting forth certain facts regarding the payment of a mortgage or indeed any Statutory Declaration, in itself is an instrument within the meaning of subsection 1 of section 2 of the Registry Act, and therefore should not be registered. This becomes plain when you refer to the Custody of Title Deeds Act, section 2, showing that the word "instrument" in the Registry Act does not cover such instruments as Statutory Declarations as to the existence or non existence of any facts, events or occurrences upon which the title to land may depend.

As the registration of such an instrument under the Registry Act might form a cloud upon a person's title and give rise to serious complaint, I advise you not to register it. The parties may accomplish part of their object by depositing it under the custody of Title Deeds Act.

Responsibility of Registrar for Registering Certificate of Discharge of Mortgage Executed by Persons who had not Authority to Execute it—Duty of Registrar in Making Entries as to Certificate Discharge of Mortgage.

To A Registrar.

Your question raises a question not for my decision but for that of a Court, namely, "Is there any responsibility on the part of the Registrar for registering a certificate of discharge of mortgage executed by the wrong person, and what effect would it have on the mortgage if the certificate so executed by the wrong person was so entered?"

I think where a certificate is not executed by the mortgagee the Registrar should note the fact and show by whom it is executed, in any abstract he gives, and also in the abstract index, and in any certificate of discharge he endorses on the mortgage.

Regarding the case you state, where a mortgage was dated in 1862 and where in 1865 the original mortgagee, notwithstanding that he had assigned the mortgage, gave a certificate of discharge and the certificate of discharge was registered, you will, I should say, be sufficiently protected by showing in any certificate you give, all the facts on record, namely, the mortgage, the assignment, and the fact that the discharge of mortgage in 1865 was executed by the original mortgagee; then parties dealing with the title will, if there be any defect in it, have to get it cured the best way they can.

FEE FOR EXHIBITING AN INSTRUMENT WHERE REGISTRAR NOT FURNISHED WITH ITS NUMBER AND WHERE HE HAS TO SEARCH ABSTRACT INDEX.

To A Solicitor.

The case you state is that you required a search of an assignment of mortgage from J. to K. of part of lot 2, concession 11, Township of X.

You state you did not know the number of the instrument and the Registrar had to search the lot to find the instrument. You contend that under subsection 9 of section 111 of the Registry Act, 1893, the charge should be ten cents, but as there was some doubt in the Registrar's mind in regard to charge, you and he agreed that you should write to me about it. You ask me to let you know what the charge should be.

Treating this as a reference to me under section 112 of the Registry Act, 1893, I give my opinion as follows, and I do so without following my usual practice of hearing both sides, as my opinion does not favor your contention.

I think subsection 9 to which you refer applies where you furnish the Registrar with the number of the instrument. It is then his duty to search for the instrument in his office, take it out and exhibit it to you, the charge for same being ten cents, but where it is necessary for the Registrar to search the registry books and indexes relating to the lot in order to ascertain the number of the instrument which you wish to have exhibited, then I think under subsection 2 he is entitled to a fee of twenty-five cents in addition to ten cents for a search for and exhibiting the instrument when he shall have ascertained the number thereof.

I decide the matter accordingly. I am sending a copy of this letter to the Registrar.

A MORTGAGE WRITTEN IN THE ENGLISH LANGUAGE BUT APPARENTLY SIGNED IN HEBREW MAY BE REGISTERED.

To A Registrar.

In answer to your letter of July 21st as to what you are to do in case of a mortgage presented to you for registration which is written in the English language, but appears to be signed in Hebrew, I understand from your letter that the witness swears that he saw the instrument duly signed, sealed and executed by J. and E. B., the parties thereto, but he does not state that he understands both languages and that the characters made by those parties form their two signatures.

I am of opinion that you should register the instrument. The signature can be made by a man in any style he likes, or in any language he likes. He may make a mark or use any form for his signature, so long as the witness swears to the signature. I think this is sufficient. In copying it in your Registry books, you must make the best imitation you can of it.

A Person Tendering Will for Registry Cannot Restrict the Registry of it to the General Register if its Contents Require That it Should go into the Separate Register.

To

A Registrar.

Upon my return I find your letter. The case as stated by you in that letter, is, that you have received a will for registration in the general register, in which, upon close examination, you find the following section:

"I give and bequeath to my son in-law, J. W., a life interest in the house and the west part of the two acres of land, lot "J" situated on H street and C H avenue, in the Township of , the dividing line to be from fence to fence in line of eastern wall of house he now occupies, reserving the right of way to tower for water. At the death of my said son-in-law, J. W., I direct that this portion of my said property be equally divided between the surviving children of my late daughter, S. W."

You further state that although the plan upon which lot J is, is not mentioned in the will, yet the description is sufficient to easily locate the property. You further say that the rest of the will is made up of bequests of real property not specifically mentioned and personal effects and money, You state that you think the instrument should be registered in both the general register and in the books for the Township of , where the land above referred to is located, and you desire my opinion on the subject, You further state that the view you take in the matter is not disputed but it is in abeyance.

My opinion is, that this will should certainly go into the separate book for the Township.

I note what you say at the opening of your letter, that you received the will for registration in the general register.

If that means that the party tendering the will for registration, asked you only to register it in the general register, I think he had no power to limit the registration of the instrument, that is, if the contents of the instrument are such as to require you, under the Act, to register it both in the separate and general registers, then the person tendering the will for registration has no power to limit the registry, except, of course, under the special clause of the Act providing for limited registration upon proof furnished that since the will was made lots described in it by local description were sold by the testator in his lifetime, etc.

MODE OF RETURNING AN INSTRUMENT WHERE SAME DEFECTIVE OR INSUFFICIENTLY PROVED.

To

A Registrar.

On my return I find your letter of 25th August in which you put the following question :

"In case an instrument received with the fee through the mail is not capable of registration because of some defect in the execution, as, for instance, the witness neglecting to sign, is the Registrar doing his duty in mailing such an instrument back to the person sending it, and in case of it then going astray who would be responsible?"

Premising that my opinion in such a case is in no way binding and would not have the effect of a decision, I have no objection to giving it, and that is, I think, that where you on proper grounds, return an imperfect instrument for the purpose of having defects cured, you would be justified in employing the same mode of transmitting it back as had been employed by the person in sending it to you.

By way of greater precaution and especially if you were dealing with a stranger or person whom you did not know to be a reliable person, it might be well to register the letter of transmission.

AFFIDAVIT OF EXECUTION OF INSTRUMENT TAKEN BEFORE NOTARY IN FOREIGN COUNTRY NOT TO BE REJECTED BECAUSE NOTARIAL SEAL NOT AFFIXED.

To A Registrar.

I acknowledge the receipt of your letter in which you desire to have my opinion as to whether the recent Act, 60 Victoria, Chapter 14, Section 76, which dispenses with the necessity of a Notary affixing his seal to affidavits, etc., applies only to Notaries in the Province of Ontario, or whether it applies to Notaries in any foreign country in respect of affidavits taken before them proving the execution of documents for registration in Ontario.

In reply I have to say that in my opinion a Registrar, until some judicial interpretation is given of Section 76, is justified in accepting, and ought not to take the responsibility of rejecting an affidavit of execution of an instrument for registration purporting to be taken before a Notary Public in a foreign country, without the Notary's seal being affixed thereto.

"Entering" Debenture By-laws Means Copying Them in Full.

To A Registrar.

I am in receipt of your favor.

In it you ask my opinion as to whether under Section 47, Subsection 2 of the Municipal Amendment Act recently passed (60 Victoria), the Registrar is required to copy all the Debenture By-laws received as he formerly did under the Debenture Registration Act, which is now repealed.

In answer to this question I have to say that it is to my mind clear, under Subsection 2, entering the By-law in the proper books means copying it in full. It is spoken of as the registration of the copy and entering it in the proper book means, I think, copying it in full in the proper book. There is nothing said about abstracting it, or entering certain particulars from it; hence I think the proper course is to copy it in full.

Plans Filed in Registry Offices under Railway Act of Canada—Duties of Registrars and their Fees Governed by Railway Act.

To An Engineer.

Your letter to the Honorable the Attorney-General, on the subject of filing of railway plans in registry offices, has been referred to me.

Under the former Railway Act, Revised Statutes of Canada, 1886, such plans and the book of reference were required to be deposited in the offices of the Clerks of the Peace.

By the Railway Act, 1888, they are required to be deposited or filed in the Registry Office instead of the office of the Clerk of the Peace.

My present view is that the duties of Registrars and their emoluments in connection with such plans are dependent upon the provisions of the Railway Act, and that the plans which, by the Railway Act, are required to be deposited in Registry Offices, do not come under the provisions of the Registry Act.

However, these views are of first impression, and I would prefer to reserve the giving of a formal opinion until the matter comes up for my decision in a formal way under Section 112 of the Registry Act, 1893; so the course I recommend you to take is this, with any Registrar with whom you have difficulty. If he objects to receive the Plans under the Railway Act, you should dispute his fees and then have him refer the matter to me or you should refer the matter to me under Section 112 of the Registry Act and I will then hear what the Registrar's view is, as well as hear from you and I will decide the dispute.

It is probable, however, that if you show this letter to the Registrar you will have no further difficulty.

As to Extra Fees for Registering Discharge of Mortgage Covering Property in Two Different Municipalities.

To A Registrar.

As you desire it, I will give you an opinion on the point you mention if you will point out to me under what section of the Act you think a larger fee than fifty cents is payable.

I call your attention to the fact that subsection 1 of section 111 of the Registry Act of 1893 does not apply to certificates of discharge of mortgage, because these are specially provided for. The section providing for fees for registering each certificate of payment of mortgage money, is subsection 10, and that provides a fee of fifty cents, and the only provision for an extra fee is where the certificate affects more than four different lots or parcels of land. There is nothing there providing for an extra fee where the certificate covers property in two different municipalities unless it affects more than four different parcels of land.

Registration of Wills—Subsection 2 of Section 70 Registry Act.

To A Registrar.

In answer to your letter I have to say that the words of subsection 2 of section 70 of the Registry Act 1893, beginning "and if any addition" must be read in connection with the former part of that section, that is to say, in order to require the Registrar to treat the will as coming within subsection 2, there must, when the copy is left, be attached to it an affidavit or statutory declaration, etc. That is an essential preliminary to bring into operation subsection 2.

COMPLAINT AGAINST REGISTRAR FOR HAVING REGISTERED A DEED WHICH DID NOT EXPRESS A CONSIDERATION.

To

Regarding your letter to the Hon. the Attorney-General referred to me, I have to say that I have received Mr. Z's explanations and I also saw the original papers.

Whoever drew up the deed dated 4th of July, 1882, omitted to put in the consideration money. The Registrar had nothing to do with this omission.

Mr. Z. was also quite right in refusing to allow the original deed, after it was registered in his office, to be altered or interfered with in any way. Any person who alters a registered instrument or makes any memo. words or figures in writing therein after it is registered, is liable to be punished by a penalty of not less than $5 and not more than $100 besides costs.

The document was properly executed and properly proved for registration at the time it was registered and the Registrar was entitled to register it, even without any consideration being stated in it. In many cases a deed is quite good without a consideration stated in it and it is none of the Registrar's business whether the deed contains a consideration or does not contain a consideration.

The deed lately registered contains a recital as follows:

"Whereas by Indenture bearing date the 4th day of July, A.D. 1882, the said party of the first part did convey the lands and premises hereinafter described to one Wm. C. C. which said conveyance was registered in the registry office for the county of . And whereas by mistake the consideration money for said conveyance amounting to the sum of three hundred dollars was not expressed or shown in said conveyance and in order to clear up any doubts as to the title to the said lands and premises the said party of the first part hath agreed to execute these presents. And whereas, etc., etc."

That plainly shows that the mistake was not made by the Registrar. It was probably an oversight on the part of the person who drew the original deed. If that person was negligent, it may be you can look to him, if to any one, for some redress; but of course I do not express an opinion on that question.

COMPLAINT AGAINST A REGISTRAR IN CONNECTION WITH REGISTRATION OF A DEED CONTAINING AN ERRONEOUS DESCRIPTION OF LANDS.

To

I have now heard from the Registrar regarding your letter of 27th November. I have also again perused your letter and examined the sketch endorsed on the back of it.

It appears that fifty acres which you own of lot four in the 11th concession is described, or should be described, as the southwest half of the southeast half, or in other words, the southwest quarter of the lot. The adjoining fifty acres, which belonged to Smith, may be properly described as the southeast quarter, or the northeast half of the southeast half of the same lot.

It appears that in January last Smith conveyed a portion of lot four in the 11th concession, describing it as the southeast half of lot four; this would appear to cover, not his own, but your portion, or a portion of your lot. The error in the description in the Smith deed probably arose from a clerical mistake on the part of the person who prepared the conveyance. This deed of Smith's was sent to the Registry Office for registration in the usual course, and was by the Registrar entered in the ordinary way against the property described in the deed.

You tell me now that you have sold your portion of the property, but the purchaser considers the Smith deed a cloud on your title, and desires to have it removed. The questions you ask are :—

1. Was the Registrar at fault in registering the deed containing the erroneous description ?

In answer to this, I have to say that I think the Registrar was not at fault. It is not his duty, when such an instrument is sent to him for registration, to enquire whether the party who makes the deed was the owner of the land therein described or not ; if the instrument is presented to him properly executed, and the execution of it is proved as the law requires, he is required to register it. I therefore see no fault on the part of the Registrar in receiving and recording the Smith deed.

2. You ask whether the Registrar should not erase the deed from his books or correct the error in his books ?

In answer to this I have to say that he is not at liberty to alter thus his books, nor to alter thus any instrument registered.

I regret the difficulty you have been placed in, without any fault of your own, but you may have a remedy against the person or persons who have created the difficulty ; in other words, if the circumstances are as I understand them from your own letter, and from that of the Registrar, it seems to me that you may be in a position to compel the parties who, through error or mistake, have created a cloud on your title, to remove that cloud at their expense. I have no power, however, in that matter.

Deeds and Discharges of Mortgage Executed under Power of Attorney where Discharge of Mortgage not Executed by Mortgagee Certificates and Abstract Should shew by whom Executed.

To , a Registrar.

I am in receipt of your letter regarding execution of deeds and discharges of mortgage by A. P., under power of attorney.

In reply I have to say that I consider it to be your duty to register any deeds or discharges of mortgage executed by the attorney, but you are, of course, to note the fact in your abstract index, and also in any abstract of title or certificates you may give, that is, the fact that the instrument was executed by attorney, naming the attorney. Then it will be the duty of those afterwards looking into the title to satisfy themselves as to the extent of the attorney's authority.

I also recommend you to be careful in all cases when you give certificates of discharge of mortgage, where the discharge is not executed by the mortgagee, to show by whom the discharge was executed.

Registration of Debenture By-Laws under New Act.

To A Registrar.

I am in receipt of your letter of 11th December.

In it you ask my opinion as to whether, under section 47, subsection 2 of the Municipal Amendment Act, recently passed (60 Vict), the Registrar is required to copy all the debenture by-laws received, as he formerly did under the Debenture Registration Act which is now repealed.

In answer to this question I have to say that it is to my mind clear under subsection 2 entering the by-law in the proper books means copying it in full. It is spoken of as the Registration of the copy, and entering it in the proper books means, I think, copying it in full in the proper book. There is nothing said about abstracting or entering certain particulars from it, hence I think the proper course is to copy it in full.

2. There is nothing in the Act, I think, which require a schedule, unless, of course, a schedule was part of the original by-Law.

AFFIDAVIT OF EXECUTION SWORN IN ENGLAND BEFORE A COMMISSIONER OF OATHS.

To Solicitors.

I am in receipt of your letter of 14th instant.

I daresay the affidavit sworn in England, to which you refer, before a man who signs himself "a Commissioner of Oaths," may be considered to have been sworn before "a Commissioner authorized to administer oaths in the Supreme Court of Judicature in England," and I think that a Registrar would not be open to blame for accepting an affidavit so sworn, in proof of the execution of an instrument.

CERTIFICATE OF REGISTRATION OF DEBENTURE BY-LAW. FEE THEREFOR.

To A Solicitor.

Your letter of the 14th directed to Toronto has been transmitted to my address here.

I agree with you that the Act should provide for endorsing a certificate on the original by-law.

If it will answer your purpose I do not see why the Registrar should not give you a certificate to the effect that a certified copy, authenticated by the seal of the Municipal Corporation, and the signature of the head thereof, and purporting to have the signature also of the Clerk of the Corporation, was billed in the Registry Office and entered in book on such a day, giving the title and number of the By-Law.

I do not see why the Registrar should not, for the ordinary fee for a certificate, of 25 cents, (and subsection 5 of section 111 of the Registry Act, 1893) and at all events upon payment of an additional fee of 50 cents for a search under subsection 5 of section 47 of the Municipal Amendment Act 1897, give you such a certificate if it would answer your purpose.

If you apply to him for such a certificate the better way would be to draw it up in the form in which you wish it and send it to him, telling him to make the necessary search to enable him to fill it up and sending him 75 cents, and you might also send him a copy of this letter.

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RETURN

RE THE MANUFACTURE IN CANADA OF PINE TIMBER CUT ON THE CROWN DOMAIN.

1. Documents presented to the Government by delegations of Canadian lumbermen and American lumbermen, and report of interviews with American lumbermen.

2 Letters and statements appearing in the public press to which the attention of the Government has been called.

3. Copies of Orders-in-Council and Regulations, (*a*) as to the manufacture of timber in Canada; (*b*) as to the purchase of supplies in Canada; and (*c*) as to the employment of residents of Canada in connection with lumber operations.

Presented to the Legislative Assembly of Ontario

By Command,

Provincial Secretary.

Provincial Secretary's Office,
December, 1897.

RESOLUTION PASSED AT A SPECIAL MEETING OF ONTARIO LUMBERMEN HELD IN TORONTO, AUGUST 19TH, 1897. PRESENTED TO THE EXECUTIVE COUNCIL BY MESSRS. BERTRAM, SCOTT, RATHBURN AND WALDIE.

Moved by James Scott, seconded by Jno. Bertram,

That whereas the Government of the United States have imposed an import duty of two dollars per thousand feet on sawn lumber;

And whereas that Government has made special provision in the tariff that a still higher import duty may in a certain event be imposed on sawn lumber;

And whereas that Government has not imposed an import duty on saw logs;

And whereas, by the present Canadian tariff, sawn lumber is admitted into Canada free of duty;

And whereas the said Canadian tariff permits the export of saw logs free of duty;

And whereas the effect of such tariff arrangements is highly injurious to the true interests of the owners of saw-mills in Canada, the Canadian workmen, and Canadians generally, as tending to transfer the sawing of lumber from Canada to the United States;

Be it therefore resolved, that in the opinion of this meeting the exportation of saw logs should be restricted;

And with that object in view the Government of the Province of Ontario be requested to so amend the Pine Timber Regulations that all pine timber cut under license in the Province of Ontario shall be manufactured in Canada.

Carried by a vote of 48 for and 11 against.

JOHN I. DAVIDSON,
Chairman.

EDGAR A. WILLS,
Secretary.

PAPER BY MR. JOHN BERTRAM.

I have the honor to join with my colleagues in this matter in presenting to your honorable body the copy of a resolution passed by a numerously attended meeting of the lumbermen, held at Toronto, on the 19th inst. The resolution sets forth that by the action of the United States Government a duty of $2 per M ft. shall be levied on lumber entering the United States, while saw logs are entered free. This as a matter of course would greatly encourage the sawing of Canadian logs in the United States, and correspondingly discourage sawing in Canada.

It is obvious that the authors of this legislation feared that the Government of Canada would, for the purpose of protecting a valuable industry, place an export duty of a similar amount on all logs leaving Canada to make the conditions even for both American and Canadian limit holders; and so enacted a further cluse, that "If any country or dependency shall impose an export duty

on sawlogs, round unmanufactured timber, stave bolts, shingles, bolts or heading bolts exported to the United States, or a discriminating charge on boom sticks or chains used by American citizens in towing logs, the amount of such export duty, tax or other charge, as the case may be, shall be added as an additional duty to the duties imposed upon the articles mentioned in this paragraph when imported from such countries or dependencies." Without in any way questioning the motives of this legislation, it may be fairly said that it is discriminatory in its nature; that it is an attempt to transfer the bulk of the business of sawing lumber in the Georgian Bay district to Michigan. As the resolution now presented is in favor of action being taken by the Government of Ontario, it is not necessary to discuss it, except incidentally, from a Dominion standpoint. Confining ourselves, therefore, to Ontario, it may be said that in the province there are two main divisions or districts where lumber is manufactured for export: the Ottawa valley and the Georgian Bay district. For geograpical reasons, logs cannot be exported from the Ottawa valley profitably to be sawn anywhere in the United States, and so our attention is confined to how it will affect the Georgian Bay and its tributory district.

The Ontario Government, by virtue of their policy of disposing of their standing timber on crown lands from time to time by open competition, subject to certain conditions, have sold to three classes of purchasers, to whom they have an implied obligation of guaranteeing equality in the enjoyment of their purchases. The three classes of purchasers are Canadians, who manufacture lumber in Canada: Americans, who manufactnre lumber in Canada, having erected sawmills for that purpose, and Americans, who have bought timber to saw at their mills in the United States. Now, leaving out for the moment how the Canadians would be affected, let us consider the condition in which the two classes of American buyers would find themselves. Two purchasers of timber limits, it may be, situated side by side, commence to operate in our forests—one takes his product in the log to the U. S. and has it admitted free of duty, while the other goes one step further in making the product of the forest marketable, and is on that account charged a duty of two dollars per M. ft. This is a direct fine on the American who has transferred the sawing of his lumber to this country, which provides his raw material. It is an injustice which could be easily remedied by the Dominion Government reverting to its former policy and placing an export duty on logs. This is sought to be prevented by the retaliatory clause in the bill before quoted.

It would savor somewhat of bravado to take up a challenge thus thrown down, and would bring about a deadlock in the business and strained relations with the United States, and is a remedy to be applied only as a last resort. We now have the honor of presenting to you in this resolution a much easier and simpler solution of the difficulty.

The Government of Ontario, who sold the limits to both parties, and who were glad to welcome the Americans here to build their sawmills, owe them, certainly, some protection in their investments. They are in the position of partners with the purchasers, and have only sold the right to cut the timber, subject to the payment of crown dues, ground rent and any other regulations considered necessary from time to time. It would seem, therefore, that the Government cannot afford to allow an injustice of this kind to prevail against Americans sawing lumber in Canada, brought about by the action of a foreign government, without applying whatever remedy is in their power. And if this can be said in the interests of American citizens carrying on their business here it applies with equal force to the citizens of this country. A claim has been made that it

would be unjust or dishonorable for the Government to take action now in limiting the disposal of the timber after selling, but it is well known that the power of making further regulations remains with the Government. The conditions are published and read out at the time of the sale, and are well understood, so that intending purchasers have a full knowledge of this latent power, which can only be exercised by a government for the whole people in their best interests.

The most natural way to have rectified this inequality of conditions (which would have the effect of keeping the Michigan mills running at the expense of the Canadian,) would be to revert to the old export duty of $2 per thousand imposed by the Dominion Government, which was only taken off by the agreement of the two governments, and which every lumberman doing business on the lakes knew would be again imposed whenever the former American duty on lumber was reverted to. The framers of the Dingley bill have tried to make an export duty on logs impossible by the retaliatory clause, with a full knowledge of the injustice it would work, and cannot complain if it is met in a way to place all workers in our Ontario forests on an equal footing. The claim, therefore, that any action by the Government of Ontario would be an unjust interference with vested rights falls to the ground on both counts.

1st. The American purchaser of standing timber knew the conditions of sale as they were proclaimed at the time. 2nd. They also knew that free logs to stock their mills was only obtained by agreement and when the agreement ceased to be operative the export duty would again be imposed.

The attempt to hinder the free action of the Canadian Government by the retaliatory clause only makes the matter worse and proves that a full knowledge of the situation was in the minds of those who were the real authors of the retaliatory clause.

To offset then this inequality and injustice, the Government of the Province of Ontario is respectfully requested to pass an Order in Council to the effect that so long as the before quoted retaliatory clause remains the law of the United States, the Crown timber regulations shall be so amended that all pine timber cut under license in the Province of Ontario shall be sawn into lumber or made into square timber in Canada, all of which is respectfully submitted.

JOHN BERTRAM.

August, 1897.

PAPER BY MR. JOHN WALDIE, TORONTO.

HAS ONTARIO PINE TIMBER TO SPARE?

In a review of fifty years, which is a very short period in the history of a country, we find that from 1840 to 1855 this Province cut the finest white pine that ever grew—exceeding in excellence the famed Saginaw Valley pine—all along the borders of Lakes Ontario and Erie, and for 30 miles back; and this cutting was followed by settlement, until to-day this is one of our richest agricultural districts, studded with villages, towns and cities.

From 1855 to 1870 the cutting of pine trees for commercial purposes was centred in what may be called the Peterborough, Orillia, Barrie and Collingwood district: reaching the shores of the Georgian Bay, where also the saw-mill was followed closely by the settler, until the whole of this central part of the Province is covered with fine farms and prosperous towns.

From 1870 to 1885 the cutting of pine was pushed still further back towards the head-waters of streams running south and beyond the divide of land, into waters which ran into the Georgian Bay from the Muskoka district. In this district, though not equally as fertile from an agritultural point of view as the land south of it, the saw-mill and lumbermen were followed by settlers, and prosperous villages and towns are now the habitation of a large population, and industries, other than those incident to lumbering, are located, giving a promise of permanence which is a delight to every lover of his country.

Up until this date, any Americans who came to Canada to engage in lumbering did so with a view of becoming citizens, and of remaining in the Province. Many of them, with their families now grown up, are amongst our best citizens. To all such we extend a welcome invitation—come and join us in developing the finest country, all considered, under the sun, and which a kind Providence has endowed with what is best for mankind, a healthy climate, in addition to a wealth of agricultural, timber and mineral resources, not excelled in any land.

1885 to 1897. We now reach a period in the history of the Province marked with varied and rapid changes in the lumbering business. Owing to the pine tree being further up the stream and more distant from the mills, the business of saw-milling had to be conducted on a larger scale, and instead of having ten small saw-mills in a township we have the large saw-mill cutting its supply of pine saw-logs from ten townships—quite a change. Only those who could cut from three to twenty-five million had a chance to compete successfully in cutting pine, but the smaller mills are actively and profitably engaged in the sawing of all other kinds of woods, in addition to such pine as remained near.

The selling of a license to cut on large areas of Government lands led to the increase of larger mills, which required the cutting of the pine in the Nipissing and Algoma districts without any regard to its results in forwarding the settlement of the country, and we find at present the following interests owning and controlling nearly all the available pine in the districts named.

1st. The Canadian mill-owner, who has mills on the shores of the Georgian Bay at the mouth of the rivers down which the logs are driven, or situated on the south shore where the logs, when towed on the open water, give the mills located there the advantage of railway transportation throughout the year. Those so engaged not only cut the tree but saw the log into lumber, and attract a fixed population, which is the basis of the prosperity of a country.

2nd. The American mill owner who has bought limits and who has built mills and is doing his share to give the citizens of the Province continuous employment: also others who hire their logs cut by Ontario mills. These occupy the same position as do Canadians.

3rd. The Canadian limit holder who is cutting logs to sell to Canadian mills, or who holds limits on speculation. These are a very limited number, although controlling a considerable area of territory.

4th. The Americans whose mills are located in Michigan where the timber, formerly tributary in their own country to their mills, has all been cut off, and where the mills would be idle if they could not get Canadian logs to manufacture. This is shown clearly by their decreased cut during a period taken from American statistics, viz.:

Logs manufactured into lumber in the Saginaw Valley—

In the year	1882	1,439,852,067 feet.
"	1887	1,322,231,426 "
"	1892	1,162,017,393 "
"	1896	513,585,293 "

Out of the 513 million feet cut in 1896 nearly half were Canadian logs (the quantity of saw logs taken that season being 264,236,314 feet, as per clearance returns).

This rapid and wasteful cutting which has left portions of Northern Michigan an uninhabited and untilled territory was not a prudent course.

Therefore it is the duty of every well wisher of the Province to consider whether in the interest of the general public, and of the continued settlement of our lands, the cutting of pine sawlogs should not be restricted in so far as the same is being carried on under a license to cut on Crown Lands to such quantities as can be manufactured in the country.

Further, a limit to the size of the tree cut would be a proper matter for the Government to consider with a view to preserving our forest wealth, where settlement is not impeded thereby.

The relative importance of the saw mill industries of Ontario which derive their supply from Crown Lands will be shown by the following figures taken from the Report of the Commissioner of Crown Lands, viz.:

For the year	A total cut of	Of which the Ottawa District returned
1893	718 million feet	109 million feet.
1894	613 "	144 "
1895	800 "	199 "
1896	904 "	184 "

and the Ottawa District includes the cut of mills situate throughout the whole Ottawa Valley in the Province of Ontario.

A careful computation of the lumber manufactured in Ontario from logs of all kinds, pine, hemlock, cedar and hardwood, leads to the conclusion that the mills situate in and near the City of Ottawa do not manufacture more than ten per cent. of the whole.

A further division of pine sawlog returns for the season of 1896 shews as follows:—

Logs towed for American mills	264,236,314 ft. B.M.
Logs returned for the Ottawa District	184,448,623 " "
Leaving for balance of Ontario	455,694,773 " "
	904,379,710 " "

This shows that the cut of logs from Crown Lands in Ontario for American mills has increased by leaps and bounds until it is now 50 per cent. more than what is cut in the whole of the Ottawa Valley. The question now arises, Where is this to stop?

It must be borne in mind that the Michigan mills have a capacity to manufacture double the quantity of saw-logs ever cut in Ontario in one year. Therefore, in the event of a revival of business in the United States, should these mills —their own timber being gone, and stimulated by a government bonus of $2.00 per thousand feet—increase their cut in the Province to what it was in the Saginaw Valley in 1882, viz: 1,439,852,067 ft., the whole pine tributary to Georgian Bay would be swept off in less than five years, and every Ontario mill that could not find a local market for its product would remain idle, thereby decreasing the active population of the district by the removal of its most useful and industrious citizens.

TORONTO, ONT., Sept. 21st, 1897.

HON. A. S. HARDY,
Parliament B'ld'gs, Toronto.

DEAR SIR,—At the request of Mr. E. W. Rathbun, of Deseronto, I enclose to you herewith a communication from him on the log question, which I have had type written here for him.

Yours truly,

(Sgd.) C. A. MASTEN.

DESERONTO, September 17th, 1897.

The Honourable The Attorney-General of Ontario, Toronto:

DEAR SIR,—Pursuant to the permission you kindly accorded to me, when I had the privilege of addressing you and your colleagues, I now beg to hand you my views upon the enclosed resolution passed at the recent meeting of the lumber trade at Toronto.

I have ventured to express my views, not merely from the standpoint of the lumberman's interest, but also generally, and trust that if, in so doing, I have travelled somewhat widely, you will pardon me, and will recognize it as arising from my deep interest in the question, and my desire to afford every suggestion that can be of value to yourself and colleagues.

Before entering upon a discussion of the various points, let me remind you that the views of lumbermen and licensees of Crown Lands necessarily vary widely, because usually affected by their individual interests and by the effect which the proposed policy would have upon those interests. It is scarcely possible that men who are profitably engaged in the export of logs from this Province to the United States, or who may be engaged in the manufacture of Canadian logs in Michigan or other States, can look without prejudice on regulations which would prevent the continuance of their business. It is no doubt the duty of the Government to hear these men in respect to their own individual rights, but having heard them, your Government will no doubt consider the extent to which their views may be affected by self-interest, and will then do what will benefit most the people at large, and conduce to the general advancement of the Province.

I have no doubt also that they will not lose sight of the fact that the preservation and judicious management, cutting and manufacture of our forests, are invaluable factors in the interests of the colonization of the Province, in the maintenance of its revenue, the affording of employment to the inhabitants, the preservation of its climatic conditions and are thus the foundation of agriculture, horticulture and general industrial development.

In other words, the Province owns our forests, the lumbermen are only lessees thereof, and while the lumbermen are to be consulted so far as any change in policy affects their individual interests, yet after such consultation, the question will be dealt with by the Government on a wider basis and having regard to the interests of the state, present and future, rather than to the representations and personal interests of particular lumbermen, whether engaged in Michigan or elsewhere.

Present Policy in New Licenses.

The Government of Ontario have, in their recent sales of the right to cut timber, very properly stipulated that the logs and timber shall be manufactured within the Province.

Its Extension to Renewals of all Licenses.

The Government are thus committed to the policy of the above resolution and if they hesitate to apply to current timber licenses, the same principles, it can only be because they fear by inserting such a provision in the renewals of existing licenses, they may be failing to observe good faith with parties who purchased limits, relying on the situation as it existed on and prior to May last. That situation has been changed by the American Government. For purposes of their own, they, acting within their rights, have withdrawn from the arrangement made in 1890, and have imposed a duty of $2 per thousand on Canadian lumber, manufactured in Canada, entering the United States, with provisions for increasing such duty if Canada attempts to protect the interests of her citizens engaged in the lumber business.

The indirect effect of that legislation at Washington is to strike a most severe blow at the manufacture of lumber in Ontario, a blow so severe that if not checked, it is likely, in my opinion, to destroy the greater part of the lumber manufacture of that Province. (I refer in detail to those effects below).

The result then is, that during the past year, and since the last annual licenses were issued by the Ontario Government, a complete change in the situation of affairs has taken place. (1) In place of our lumber entering the United States free of duty as it did a year ago, the Dingley Tariff, imposing a $2 duty, has been passed: (2) Within that time, definite and authoritative information has been received, which was not before available, showing that the supply of white pine in the United States is almost exhausted; (3) Our opportunities, actual and potential, for working up and disposing of our own forest products, has in consequence of the new era of prosperity and the extension of our foreign trade, vastly increased. These changes are so important that they alter the whole ground work on which the Government granted the licenses that are now current.

The highest duty of the State is self-preservation, and self-preservation, so far as the lumber manufacture of Ontario is concerned, demands, in my opinion, the adoption of the resolution under these altered conditions. Had the Province of Ontario entered into any contract with the purchasers of limits to renew their licenses yearly, *without any change of terms*, you would have been bound to fulfil such a contract, but the current licenses contain no such provision. On the contrary, they do contain a provision as follows:—

But it is said that to adopt the proposed resolution is virtually to confiscate the property of those lumbermen who have purchased limits relying on their right to take our logs to the American cities and there manufacture them, and that the price which has been paid by them and received by the Government would not have been paid if this restriction had originally been inserted in the license to be granted. Also, that not only are American lumbermen interested in this way, but that our own banks in Canada have loaned to these lumbermen large sums of money which they will be unable to pay to the banks if they are prevented from cutting their logs for shipment to the American side. For the reasons which I state later in this paper, I am very strongly convinced that the

adoption of the resolution would not prevent these men from cutting and manufacturing their logs in such a way as to fulfill all their obligations, and I believe that very little, if any, loss would occur to our banks from any such sources. If, however, any loss did occur, I submit also for the reasons stated in detail hereafter, that it would be compensated in other directions, because the banks' security with other customers, mercantile and manufacturing in all sections of the country bordering upon the timber area, would be made better by the maintenance and improvement of present prices of fixed properties in the towns, villages and districts adjacent to the lumber areas. The millions of dollars which have been invested by loan companies through the new sections of the country will be jeopardized, or the security improved, according to the action of the Government in relation to this matter.

Even if some particular interest would temporarily suffer by the adoption of the resolution, yet because in my opinion the general interests of the country and of the state demanded it, I believe that the Government ought to adopt their resolution, and that in doing so they would receive the support of the people.

Take as an historical illustration a case which you will remember well, and which happened in Manitoba shortly after the Canadian Pacific Railway was built. A great effort was at that time made in Manitoba, and talked up by many Canadian politicians, having been fostered and developed by American railway and flour mill men, to secure from the Manitoba legislature charters for the construction of railways from Manitoba across the line into the United States, and so connecting with American roads. Those charters were disallowed by the Dominion Government because, though the disallowance appeared to be a great hardship, not only to some, but to the majority of the inhabitants of Manitoba, yet looked at from the standpoint of the older provinces, and from a national standpoint, it was necessary that such disallowance should take place. The older provinces had undertaken the purchase of this territory, also the construction of the Canadian Pacific railway, and it was believed that our manufacturers of agricultural implements, machinery, etc., would find in that market a great opening for their goods. The Canadian Pacific railway would need the traffic, particularly in view of the expensive line around the upper lakes, and the diversion of that traffic into the United States would necessarily operate to throw the remote Province of Manitoba into such close sympathy and connection with the United States *as would prove dangerous to the unity of the Dominion.* The wisdom of the course then adopted by the Dominion Government has been amply verified by subsequent events, and I believe that the fostering of Ontario's national interests by the adoption of the resolution in question would hereafter be as emphatically endorsed and approved as was the course then taken in the general interests of the Dominion in regard to Manitoba's railways.

Vested Interests of Ontario Citizens.

But apart from the national or provincial necessity that exists of preserving our lumber manufacture, there are also vested interests on the other side of the same question which I think your government will unquestionably consider and deem itself bound to protect. Acting upon the situation as it stood, the inhabitants of Ontario and others have made large investments, not merely in the milling business itself, but in various related industries. Mechanics and workingmen have invested in homes; municipalities have built waterworks, town halls, libraries and hospitals, opened highways and made many improvements: farmers have taken up, cleared and cultivated lands in proximity to these industrial centres; railways have been extended by Provincial and Dominion aid to

capitalists, to open and populate those sections of country containing timber, mineral and farming lands. Other related industries have been established at large expense, all depending on the continued working of our timber areas and the manufacture of their products at these natural centres, as has been done in the past. This situation has been artificially interfered with and demoralized by the action of Congress at Washington, so that these vested interests of Ontario citizens are jeopardized, that industry on which they depend for a large portion of their livelihood is liable to be swept away, and the government are now under the necessity of facing the situation so brought about by the American government, and of protecting its citizens and those various industries and this capital that has been so invested.

But besides the paramount interests of the State and of Ontario citizens above referred to, there are also vested interests of Americans to be considered, for example, Messrs. Holland, Graves & Company have, I understand, expended a quarter of a million of dollars or more in erecting mills and preparing to do business here: Arthur Hill & Company have done similarly. These expenditures have been made relying on the protection of the Government, but by the Dingley bill they have been very seriously reduced in value and these firms who have made these large expenditures, having confidence in this country and the protection of its Government, ought to be cared for and their investments preserved.

Limited Supply of White Pine and its Effects.

The limited supply of white pine both in the United States and in Canada is also an important factor in the consideration of this question. The best American authorities now calculate that the white pine of the United States will, even at the present rate of cutting, be exhausted within the coming seven years.

Mr. George Johnston, Dominion Government statistician, in his report of the forest wealth of Canada made in 1895, places the quantity of pine in the Dominion of Canada, not including the Douglas pine of British Columbia, at 37,388,-000,000 feet, and credits Ontario with the ownership of some 17,000,000,000 feet thereof, and which the Honourable, the Commissioner of Crown Lands reports as being cut even during the past severe depression at the rate of nearly one billion feet per year.

In 1890 the export of logs to the United States was less than 40,000,000 feet board measure: since then it has reached some 300,000,000 feet in a single year.

As the Michigan pineries available to those Americans operating here are practically exhausted, this export of logs from Canada will, unless restricted, very shortly increase to not less than 500,000,000 feet per annum, at which rate the available timber of the Georgian Bay District and much of that now considered to be across the divide and which now goes in the Ottawa direction, will in less than ten years, have all been cut and removed to Michigan for manufacture. In fact Mr. Jno. Waldie in his very excellent paper referring to this point expresses the opinion that the concentrated operations in the interests of the mills of East Michigan will be so extended and rapid that the whole merchantable timber of the Georgian Bay and neighboring districts will be swept away within the coming five years. Is it then wise with this limited supply of timber to force our logs and lumber upon the American people when they have voted they do not want them and when within three or four years they must awaken to the fact that they absolutely need our white pine, their own supply

being exhausted, and will gladly take it in the form of lumber sawed in this Province with great profit to all its inhabitants.

Is it wise either that we should permit from our forests the stocking of American mills that are now without pine, when if the Government promptly announces the adoption of the principle proposed, sufficient mills will be speedily erected within the Province to cut whatever quantity of timber the Commissioner of Crown Lands may ascertain to be the limit of prudent and safe cutting?

The history and present condition of the State of Nevada affords an example which, while not identical, is yet instructive. The silver mines of that State have been among the richest in the world. Many of them are now worked out, but no beneficial results remain either to the inhabitants of Nevada or to the Government of the State. The wealth has gone to the eastern mine owners, and neither the State nor its inhabitants are the richer for the millions of silver which have been taken from its mountains. Possibly in Nevada it might not have been feasible to have adopted any such policy as would have made this mineral wealth the foundation of future and continued prosperity, but in the Province of Ontario and in the lumbering of white pine the case is different; if we permit our forests to be stripped and our logs to be floated away by American lumbermen, our situation when the forests are gone will in many parts of Ontario be precisely similar to that of Nevada. If on the other hand by the adoption of proper forestry laws, and by adopting the principle of manufacturing the lumber in the Province, we conserve and guard our forests, we can make them even more than in the past, the foundation of our colonization and industrial development in the north and west timber sections of our Province.

The question of regulations regarding our natural gas wells involves similar considerations, and has, I believe, been considered by you. I therefore only mention it without expanding on it.

The fact that our forest area is thus limited and is being thus rapidly depleted, is also an important factor, having to do with the character of the climate, the productiveness of the soil, the maintenance of water supply to our rivers and canals and the avoidance of freshets. All the scientific authorities on forestry agree upon the serious consequence resulting to any country from too rapid depletion of wooden lands, compared to nature's renewals. We are now cutting pine quite as fast and probably much faster than the timber can be naturally or artificially renewed. The Government are trustees of the timber on our Crown Lands, not only for the present generation, but also for those to come after, and for whom they are obliged to preserve and provide the necessary timber to further settlement and to maintain climatic effects and water supply, as far as practical recognition of the principles of forestry will provide. Looked at then as a matter of forestry policy, a lessening of our annual cut of white pine is no doubt desirable in the interests of the Province.

A Consideration of Some of the Probable Effects of Adopting or of Not Adopting the Resolution.

I believe with many others that if the proposed resolution is not adopted so as to counteract the effect of the Dingley tariff, or some other equally effective method be devised to retain Ontario's timber for manufacture within our own borders, that no new mills will be erected on the North Shore and the Georgian Bay District, including a considerable portion of country that is now tributary to the Madawaska and Ottawa. Not only so, but a very large number of the mills now in operation in that district, both those owned by Americans and also

those owned by Canadians, will I believe, be removed across Georgian Bay to the State of Michigan, because in so doing they will gain an average of at least three dollars per thousand feet (including the two dollars duty) in the price of their lumber, and not only will they then obtain the whole benefit of the American market free of duty, but they will at the same time, under the provision of our tariff as now framed, have the full run of the Canadian markets as freely and advantageously as though they manufactured in Ontario. .

I also believe that those lumber and shingle mills which might remain in that area would, under the circumstances, do but a local business, and being overcome by the competition of those who had removed their mills to the States, also soon dwindle away.

On the other hand, if the resolution proposed by the lumbermen is adopted, I believe that it will result in several Michigan mills being removed into the Province of Ontario, and the repairing and starting up of many idle and dismantled ones. This will be the result, because if the resolution is adopted by the Ontario Government, these Michigan mill owners being unable to procure logs in their own country, will be obliged either to remove their mills to Ontario or with them to cease cutting white pine. In my opinion there can be no question but that they would adopt the former alternative. The mills heretofore established by Messrs. Holland, Graves & Company and Messrs. Arthur Hill & Company lend force to this view.

I need not enlarge upon the way in which the establishment of these mills would stimulate development and prosperity in our northern timber country.

Again, the effect of the proposed policy, for or against sister industries, such as sash, blind and door factories, foundaries, machinery, wood distilling and charcoal iron furnaces, and many other industries allied to the working up of forest products is most important. In my opinion if the resolution in question is not adopted, the strong tendency will be, first, as I have indicated above, to banish the sawmills themselves from the country, and then with them will gradually disappear these allied industries and any possibility of the establishment of others. Not only so, but workmen and settlers will be deprived of the means of earning a livelihood or of improving their homesteads. I estimate that $3.00 per thousand feet is less than the direct net loss to the laborers, transportation companies and mill owners, which would result from the non-manufacture within our own Province of the lumber which would, under the circumstances, go across to Michigan in log form. But that loss, great as it is, and aggregating not less than one million dollars per annum on the one year's export of Ontario's logs to Michigan, is small compared to the injuries that would arise from the treeless condition of the northern country which would result from the rapid cutting down of pines of all sizes and ages under the American plan, if logs can be shipped away free It is quite true that the cutting of Canadian timber for Michigan mills can be directed and controlled as to size of logs, etc., by our Crown timber regulations, and the supply thereby be somewhat prolonged, and we would certainly derive some benefits therefrom, but how infinitesimal compared to those enjoyed from the manufacture of the lumber, waste of the mills and forests within our own borders, and to which Americans and all people are welcome upon an equality with our own.

On the other hand, if the resolution is adopted and the policy of encouraging the development of our Provincial industries is followed to the extent indicated, I believe it is entirely within the probabilities that Ontario will be not only a roducer of rough sawn lumber, but that she will rival Michigan in manufacturng into complete and finished form all forest products. There is no reason why

in this department Ontario should not equal or surpass that State, and thus make use, not only of the white pine, but also make use of the various hard and ornamental woods of which she possesses an abundant supply. The value of these hard and ornamental woods will be greatly lessened if the pine lumber manufacturing industries of the Province are removed to Michigan, because present competition demands in the inauguration at least that the taking out of the various kinds of timber for pulp-making, wood distillation, charcoal iron smelting, house finishing, furniture manufacturers, etc., be largely done in conjunction with the taking out of pine.

Canada as a whole will continue to grow and prosper, even though the present condition of affairs exist, but by no means to the extent that she will under wise forestry laws and restrictions against the export of our timber for manufacturing elsewhere. Minerals, timber and patches of good land combined in northern Ontario are ample to support the same industrial development and agricultural prosperity as enjoyed in the State of Michigan, which to day is a profitable exporter of charcoal iron to Great Britain, and yet in the supply of one, charcoal, limestone, labor and transportation, is no more favorably located or possesses more advantages than are available in and to the Province of Ontario. The foundation here of agricultural and industrial growth is as great as in Michigan, and the issue is, whether our forests shall go to support and further build up her industries, with all the accompanying advantages to her farmers of home markets, etc., or be now used to secure equally as favorable conditions within our own borders.

Future Value of Crown Timber Limits.

I also wish to direct your attention to the effect which these conditions will have upon the future value of the timber limits held by the Crown. If such a policy is adopted as will develop this Province in the complete manufacture to the highest degree of all our forest products, it will necessarily increase in a very rapid proportion the value of the timber limits remaining in the hands of the Government. To illustrate my meaning, compare the value of an unimproved bush farm, remote from markets, with bad roads, without cheese or butter factories, or with the markets of forest industries near by—such a farm with a farm cleared and improved, furnished with buildings and all farm equipments, having good and convenient roads and means of transportation to market, having adjacent to it dairy, cheese and canning factories and other means of manufacturing and marketing its products. This is an exact analogy to the position in which the Government timber limits would be placed under the two systems. If our logs are shipped away so that a mere desert of stumps remain without settlement, without mills and the market they afford, and without industrial development, with all that is thereby implied in loss of skilled labor, better schools and larger population, the value of the timber limits remaining in the hands of the Government will assuredly be at the minimum.

On the other hand, if the policy of the Government is such as to save our mills and so develop colonization and settlement throughout our timber areas as fast as the pine is cut away, we build up our home market, always the best, and improve the value of these remaining limits to an extent not easily computed. Many hardwood logs will, even to the tops and limbs, from many locations, be taken out to wagon and carriage shops, furniture factories, pulp mills, charcoal and wood distilling works, etc., which under natural conditions are established at natural centres for the manufacture of pine lumber. Every such allied industry with its factories adds to the value of the standing timber readily accessible

thereto, while if the mills that manufacture our pine logs are in Michigan, the distance from the hardwood, which cannot be floated, is practically so great that it is often wasted or, at the best, is lessened greatly in value. Ash, basswood, tamarac, spruce and elm will, under the discrimination of the retaliatory clause of the Dingley bill, very soon be taken out in logging operations for the American market, and be transported with the pine across the lake to the support of the many American industries using such timber to our irredeemable loss.

Other General Considerations.

Apart from these considerations appertaining directly to the lumber trade, there are a number of other points of more general importance, to which I beg to draw your attention:

1. If our lumber mills are removed to Michigan, our railways and vessels would lose freight, for which they were largely constructed.

2. Commercial centres of Canada would lose many customers that they now profit by, and would also lose the trade brought them by thriving municipalities depending on forest industries.

3. Looking at the matter from the standpoint of the world's trade, it appears to me that we act unwisely in handing over freely to the United States the raw material produced in our country when they could not get it elsewhere. We thus furnish them with the means of action, and strengthen their hands as rivals and competitors against us in the world's markets, while they are able at the same time, by their own local advantages and years of experience, to often produce the finished product more cheaply than we do.

4. Again, one of the principal deficiencies in Ontario is a coal supply, but on the other hand we have extensive rivers and water powers which, with the present development in electrical science and powers of concentration, promise to supply both heat, power and light, and thus in a large measure overcome our lack of coal: but these rivers are sustained and supplied by our tree-covered hillsides, and the effect of the rapid depletion of the country of its standing timber far beyond what nature can restore or renew, must produce an injurious effect upon these rivers.

5. Again, to many minds many of the results expected from the early completion of the Trent Valley Canal, connecting the St. Lawrence with Georgian Bay, will be greatly lessened if the unchecked export of our saw-logs continues. Along its proposed route there are vast deposits of marl, ore and other minerals, and there are also large districts of wild forest land. These stretches of timber lands have been culled over in former lumber operations it is true, but which, under wise encouragement, may yet be the foundation of great works for the smelting of ores, wood distillation, pulp and paper mills, furniture and other factories that will give employment to great numbers of men, and give a new opening to those hardy settlers who, in mixed farming in connection with such industries, produce a hardy, enterprising and prosperous race.

Colonization.

6. It has been and is still a part of the policy of our Government to colonize the northern section of the Province. Looking at the history of the past, there can be no question but that our northern towns, such as Midland, Collingwood, Penetanguishene, Waubaushene, Huntsville, Gravenhurst, Bracebridge, and others have been largely founded, built up and maintained by our forest industries and

by the manufacture of lumber within the Province. As it has been in the past, so it will be in the future, the settlement and colonization of our northern country, and of what is known as our timber townships, require an adjacent home market for the produce of our settlers. But if we permit the Michigan lumber manufacturer to come into Ontario, bringing in his own supplies, horses, sleighs, working, as has frequently been the case, and merely taking our logs and floating them into Michigan, there is but a restricted market afforded for the settlers, and we have left upon our lands a desert of stumps, upon which it is difficult to establish colonists. Where the forest products are worked up and manufactured in the neighborhood, these settlers and colonists have the opportunity of earning money by working in the shanties during the winter time, or in getting out the lighter or smaller kinds of lumber, and so supplementing the products of their farms: thus they have built homes of their own. In my opinion colonization would be seriously retarded, if the Government permitted the manufacture of our lumber to be transferred to the States; whereas, if its manufacture within the Province is encouraged and fostered, it will be in the future, as it has been in the past, the surest foundation and the greatest assistance towards a satisfactory colonization of our unoccupied lands.

I need not point out how this will aid the revenue of the Government by the sale of Crown lands to settlers. This income, however, is a minor consideration, compared with the advantage to be derived from the more complete and speedy colonization of the country.

Expatriation of Our Young Men.

Even under the continuance of present conditions, Canadian workmen would no doubt continue to find some employment in the shanties and on the rivers, and farmers would sell some of their products, but the opportunity for the young men of Canada to become mechanics and tradesmen through the higher manipulation of forest products in manufacturing for the consumer at home and abroad would be lost, and our young men who might, through our excellent educational system and their own tastes, be led into the great variety of industries having to do with wood; whether in the lumber or pulp mills, in the wood distilling works in the factories for furniture, house furnishing or in works producing the numberless articles from wood wanted in the British markets, would be without occupation or opening, and continue going out to a foreign land where, with our own Canadian forest products, they will find employment and scope for their energies.

Again, the adoption of the lumbermen's resolution is in accordance with the policy of the industrial development of our own country, which has been accepted and adopted, both by the Dominion and the Province. The Government of Ontario have wisely offered a bounty for the production of iron (supplementing in that respect the offer of the Dominion Government).

The Provinces have expended large sums in the fostering and development of our agricultural and dairying industries, and on all these lines they have been supported by the electorate. Forestry and lumbering have been successful native industries in this Province ever since its earliest settlement. They have been advantageous to its colonization, growth and prosperity, and have proved to be particularly adapted to the development of our natural resources. Hitherto they have maintained and developed themselves, but under the artificial conditions brought about by adverse legislation at Washington, it is necessary that some-

thing should be done by the Government to retain and foster this industry. If it is wise to encourage new industries, how much more is it important for us to take steps to retain those which have proved themselves such valuable factors in the country's development.

Further, industrial development can be increased more easily in connection with forestry than in connection with agricultural products, because we have fewer foreign competitors in the former. In the markets of Great Britain and elsewhere there is as much demand for our lumber and wooden goods as for our wheat and grain products, and the world contains far fewer sources of supply, consequently expenditures of time and money on the development of industries connected with forestry and the fostering of these pursuits will prove quite as advantageous to the provinces as the developmrnt of our agricultural resources, and in fact will tend greatly to develop locally our agricultural and colonization interests at the same time.

Answers to Some Objections made Against Proposed Policy.

Loss of Provincial Revenue.

It is urged against the adoption of the above resolution that the revenues of the Province cannot spare the income derived from stumpage on the timber now taken from Ontario to the Michigan mills. This is unquestionably a most important matter, and one that requires the most serious consideration, but I think that its importance and the loss which the Provincial revenue will suffer, are both over-estimated.

First.—The income from American cutting was last year at a minimum, and once this resolution is passed I believe that steps will immediately be taken by the owners of mills in Michigan to transfer them to Canada, or to rebuild or build anew in Canada. Many of these mills would be ready for use next spring, and this would enable their owners to take out a stock of logs during the coming winter.

Second.—Those who were unable to transfer their mills within so limited a time would make use of such mills in Ontario as are now idle or are only run part of their time, and would thus take out a large stock of logs.

Third.—The excellent prices of farm products at the present time and the general revival of business throughout the whole Dominion indicate that we have entered upon a new era of prosperity which will, in my opinion, greatly augment the Canadian demand for forestry products.

Fourth.—The adoption of this principal will, in my opinion, encourage a closer and more extensive manipulation of our forest products, by which I mean the utilization of more coarse timber and of different kinds of timber, and this will be followed by increased stumpage payment. I have given my reason for this above.

Fifth.—To the extent to which Michigan lumbermen do not take out logs in Canada, their production in East Michigan will be decreased, because these manufacturers have no source of supply from which to draw if they do not get them in Canada. The standing white pine remaining in the United States is held in few hands, and the lumbermen of East Michigan operating in Ontario have not access to these timber tracts. Consequently if Michigan lumbermen do not manufacture our logs under the proposed plan, the withdrawal from American

markets of 300,000,000 feet or more of white pine lumber would augment the price of lumber in that market, and would result in our Canadian lumbermen being enabled to sell more in that market, notwithstanding the Dingley tariff, influencing to their taking out an additional quantity of logs, and thereby increase the Government's revenue.

Sixth.—Also the withdrawal of this lumber from the American market would lessen the quantity which American lumbermen have for export, and would so augment the price of Canadian lumber in the world's markets with a corresponding benefit to Canadian manufacturers as would warrant them in an increased output and an increased cut of logs.

Seventh.—In proportion as Americans fail to supply their mills with our logs, so will the depletion of their small remaining tracts of standing white pine be the more rapid, and so will the day hasten when Ontario will be practically the sole possessor of the white pine forests of the world, thus increasing very largely the value of unsold Government limits, and enabling our Provincial Government to draw a larger revenue therefrom.

Eighth.—But even assuming that all these do not suffice to make the Provincial income from woods and forests equal to its present figure, and that in consequence some other tax has to be imposed to supply this deficiency, will not the policy of preserving Ontario logs for Ontario's people commend itself both to the Legislature and to the people, notwithstanding the additional tax, and will not the Government be more than sustained in such a policy? In my opinion your Government could not in the present temper of the people make a more popular move, or one that would more fully commend itself to the electorate than to adopt as fully as possible the principle of "Canada for Canadians," as it affects both our interests in white pine limits and other natural resources similarly situated.

But Besides Loss of Revenue Other Objections are Urged.

It has been urged as an objection to this policy that the United States would retaliate in some way not now known if Ontario were to apply the lumbermen's resolution, but the fact appears to me that in no single instance have they failed to wholly ignore the interests of Canada wherever Congressmen imagined that by disregard of her interests or by active legislation against her interests, their own position would be benefited. The Dominion Government in providing for a twenty-five per cent. preferential duty in favor of Great Britain, have wholly disregarded this fear with most gratifying results, and, in my opinion, the adoption of this policy by the Ontario Government being a minor matter, and affecting the United States far less than the Dominion legislation, would not produce any additional or further result over and above that which may be taken in consequence of the action of the Dominion Government.

Again it has been said that it is unjust for us to adopt the proposed principle because the United States permits the manufacture of Maine logs in New Brunswick, but a moment's consideration of the Dingley tariff shows the fallacy of this suggestion. Maine logs are permitted to come into New Brunswick and the lumber manufactured there returned free of duty into the United States, *but only when manufactured solely by American citizens and American laborers.* And even this is accorded because these logs cannot be elsewhere manufactured and marketed. Canada is not therefore, an importer of logs in the sense that the United States import from Canada.

Again it is objected that if this principle were adopted, the United States would probably increase to a prohibitory figure the duty on Canadian lumber, with the result that Canadian lumber would be wholly shut out from the American market, that in consequence Canadian labor would go idle, farmers would lose their markets and therefore that we had better let the Michigan and Tonawanda men come in and take our logs, that we had better send to the United States such of the best of our lumber as the present $2.00 duty will admit, and that it is the part of wisdom to look at the matter calmly and make the best of the unfair conditions that have been imposed upon us. I have given reasons above why I think that such a result would not happen, but supposing we were absolutely shut out from the American market, we still have the markets of Britain, South Africa, South America and the West Indies, and other distant lands open to us which will take quite thirty-five per cent. of our present output. The Standard Oil Company alone, for export boxes (on which they get a rebate of ninety-nine per cent. of the duty paid), will take another thirty per cent. The local trade, a growing one, and the Canadian manufacturers of furniture, doors, mouldings, and other wooden goods for export will take another ten to fifteen per cent., making in all seventy-five per cent. provided for in this way, so that with better times ahead I question the necessity for much of any reduction in the present output.

It is contended by many that the imposition of a Canadian duty on lumber coming into Canada from the United States, would substantially increase the home consumption of Canadian lumber. This being, however, a Dominion question, and involving many considerations I do not propose to deal further with it in this communication.

The Proposed Course.

Self-Preservation Not Retaliation.

The proposed course is self-preservation on the part of Ontario, and is not in any sense retaliation against the United States to whose citizens every equality and honourable treatment has been invariably accorded.

The application of an export duty by Canada, and the adoption of the resolution submitted, is spoken of in the United States, and often in Canada as Canadiaa retaliation, whereas it is as aforesaid, to gain levy duties which we have waived in lieu of advantages offered us in the American markets, by the reduction of the American duty on pine lumber, and the application of a principle regarding the manufacture of Ontario's timber which our Province is practically committed to.

The Dominion removed the export duty in 1890 in consideration of the American duty on white pine from Canada being reduced from $2.00 to $1.00 per thousand feet, and now when the United States re-impose the $2.00 duty on Canadian lumber, there can surely be no violation of principle or neighborly dealing for Canada to protect her own citizens by Ontario adopting the above resolution, and by restoring the export duty.

If these are facts, then the application of an export duty and the adoption of the lumberman's resolution is not a retaliatory act. Canada has fulfilled her obligations of the bargain of 1890. It was by the United States summarily abrogated. No effort was made or desires expressed on their part for its continuance in any form—in fact, the efforts of our statesmen to that end have been repudiated—and we are now warranted, justified, and, in fact, it is a paramount duty of our statesman to handle the public domain in the interests of Canada

alone, as pertains to labor, industrial development, prolonged fertility of soil and climatic effects.

Again, so far as yourself or your colleagues may be influenced in adopting this policy by the view that it may lead to a modification at Washington of the Dingley bill and to the reduction of the $2.00 duty on lumber, I would say, that I have received assurances from many of my friends in the United States, who are intimately acquainted with the situation of affairs at Washington, that without such action as is proposed, it will be a waste of time and money to seek any modifications of the Dingley Bill and of the $2.00 duty. In fact, when one considers the question it is impossible to see with what reason or upon what view it would be possible to seek a reduction in the tariff, unless the policy which I have described is adopted by the Government.

Again, it is said that the action of the Ottawa Government in taking power to apply an export duty was of no effect at Washington. This does not appear to me to be true, because before that step was taken no success whatever attended the efforts of our friends there, but after that step was taken at Ottawa the Senate of the United States came within one vote of passing a resolution in favor of free lumber, and did actually vote in favor of $1.00 lumber. It is believed by many that if our action at Ottawa had been taken earlier, better results would have been obtained.

Again, it has been suggested that this is a matter that ought to be dealt with by the Dominion, and not by the Provincial Government; but I have endeavored in the foregoing remarks to indicate first, that the duty of the Provincial Government is co ordinate with that of the Dominion in this matter, each of them being equally obligated to protect the interests of their citizens and of those who have invested capital, relying on their protection.

Also, that in the matter of adopting this policy as a means of colonizing the country and of laying a substantial ground of prosperity in the North-west Ontario Timber Districts, it is peculiarly within the province of the Provincial Government.

Also, that as a measure of forestry protection and guarding the future interests of the country, it comes peculiarly within the jurisdiction of the Provincial Government.

The present time is opportune for the institution of the proposed policy.

1. Because the Crown Revenues from the woods, forest and timber stumpage are now at a minimum, while at the same time the income derived from mines has rapidly increased, and is likely to continue to increase in the future, so that the revenues of the Provinces are now in the best condition possible to undergo any strain that might be put upon them.

2. Because the situation that has been developed by the action of the Dominion Government and of England in relation to Canadian trade, the attention that is now being devoted to Canada by the mother country, the rich deposits of gold, being found and worked, together with the general improvement in the course of trade on this continent, leads to the conclusion that we are now entering upon a new era of prosperity, and the principle of developing Canada for the Canadians, which is being adopted by the Dominion Government, would be aided and assisted by the adoption of this resolution by the Government of Ontario.

3. The feeling that we should develop our industrial interests and all our resources for the benefit of ourselves as a country and nation has received a great impetus in the last few months and commends itself most strongly to the elec-

torate of the Province. At the present time the Government would by the adoption of such a policy be not merely doing that which was best for the Province, but would be doing that which would commend itself most strongly to the people whom they represent, and they would be supported by the people in the institution of such a policy.

4. The era of commercial prosperity upon which I believe we are now entering would at least minimize, if not neutralize, any injurious effects to the revenues or other interests of the Province that might be occasioned by such change.

5 The time is also opportune, because, owing to the prosperity now existing in the Western States, they are consuming a great portion of the lumber which is there manufactured. If they are debarred from taking our logs to their mills, the additional price which will have to be paid by lumber consumers there, in Ohio, New York and in New England States, will be keenly felt by them, and will induce them to bring pressure to bear upon the Government at Washington to secure a more equitable trade relation with this country in the lumber business.

For all these reasons, I consider that the present time is the most opportune possible for bringing into force the policy advocated by the lumbermen's resolution.

To recapitulate, I respectfully submit that :—

(1) The adoption of this resolution is directly in line with the policy now being followed by the Government in respect to new licenses.

(2) The extension of that policy to old licenses now current is necessitated by the changed conditions introduced by the Dingley tariff, and is abundantly justified and warranted by such changes.

(3) Such an act cannot be properly regarded as in any sense retaliatory, being directed only to self preservation.

(4) The vested interests of our own citizens, whose capital is directly or indirectly interested within Ontario, in the lumber manufacture, as well as the vested interests of Americans who have established mills in Ontario, relying upon our protection are to be considered and preferred above the interests of those who buy our logs and manufacture them abroad.

(5) The limited supply of white pine in the United States, and the fact that the Ontario supply is also limited, are important factors in the consideration of the question both pointing to conclusions (1) that Americans will if necessary manufacture here, (2) that we ought to preserve our lumbering manufactures as a foundation for development and colonizing our own country, (3) that we should conserve our forests for the future, and if possible make them reproducing.

(6) If this resolution is adopted it will result in many American mills being moved here or others be rebuilt in Canada, and will bring in foreign capital.

(7) If the policy is not adopted the probability is that no new saw mills will be erected in the Georgian Bay district and many of our own mills will be moved across to Michigan, while those that remain will gradually lessen both in number and extent.

(8) With the saw mills will gradually disappear from the Georgian Bay and other neighboring districts the possibilities of many large industries, such as sash, blind and door factories, foundries, machinery and implement works, etc.

(9) The direct loss in net earnings in Ontario by laborers, transportation companies, etc., resulting from the manufacture of our logs in Michigan is not less than $3.00 per thousand feet or $1,000,000 per annum apart from indirect losses.

(10) The adoption of the resolution is in accordance with the policy of industrial development which the country has sanctioned and will strongly tend to make Ontario a great manufacturer and exporter in a complete and finished form of all her forest products, including not only those from pine, but those also from hard and ornamental woods.

(11) The removal of our lumber mills to Michigan would destroy much freight on our transportation lines, would lessen the custom and trade at our northern commercial centres and would strengthen the hands of our American rivals and competitors in the world's lumber markets.

(12) The rapid removal of our forests will prove most injurious to our extensive river and water powers upon which we depend in lieu of coal.

(13) The policy of permitting our logs taken direct from the woods to be towed to Michigan and there manufactured destroys one of the principal foundations upon which the colonization and development of our north and western timber townships is based, and so tends to deplete the revenue of the Government from the sale of Crown Lands.

(14) The establishment of all these mills and manufacturies in Michigan instead of in Ontario tends to deplete our Province of its young men and to deprive them of the means of earning a livilihood in connection with wood manufacturing industries in their own Province.

(15) Much time, money and effort has been expended by the Government in promoting the development of our agricultural industries, but the industrial development connected with forestry and timber can be more readily increased in the markets of Great Britain and would show a larger measure of success for the same expenditure

(16) For the reasons which I have set out at length I am of the opinion that the revenues of the Province will not be inconveniently, if at all impaired by the adoption of the resolution, and that, if they were at all lessened, the policy of "Canada for the Canadians" would commend itself most strongly to the electorate.

(17) The adoption of such an attitude appears to be the only way of arriving at a more equitable adjustment of trade relationships, and especially as regards timber products with the United States.

(18) The matter is one which from many standpoints is peculiarly within the jurisdiction of the Provincial Government and ought to be dealt with by them.

(19) Finally, for the reasons which I have set out at the end of this communication, I am of the opinion that the present time is most opportune for the institution of the proposed policy.

I trust that for these reasons the enclosed resolution will be seriously entertained by yourself and your colleagues, and that this policy may, as I believe it will on full consideration, be adopted, not only in regard to new licenses hereafter to be issued, but also that a regulation will at once be promulgated requiring from this time the manufacture in Ontario of all logs cut from our limits.

Let me close by referring to the views that have been expressed to you by one lumberman, contrary to what superficially might appear in his own personal interests. I refer to Mr. John H. Bertram. The fact that a man of his sound judgment and wide experience in business and politics, as well as in manufactures, advocates the adoption of this resolution in the interests of the Province, notwithstanding his postion as a licentiate and an exporter of logs to Michigan for manufacture, and still possessing timber limits most favorably situated for

further log exports, is to my mind not merely a great credit to the gentleman in question, but is one of the most convincing arguments that I can suggest to you why the resolution should be adopted.

Yours very sincerely,

E. W. RATHBUN.

P. S.—I believe that the spruce timber of Ontario should be preserved for industrial uses here in exactly the same way as white pine.

NOTES OF ADDRESSES BY AMERICAN LUMBERMEN BEFORE THE GOVERNMENT, SEPTEMBER 7th, 1897.

Reported by J. Innis McIntosh (except as to first two paragraphs), Stenographer, Department of Provincial Secretary.

Mr. W. A. Charlton, M.P.P., introduced the speakers in turn :—

Hon. John T. Rich spoke, in substance, as follows: It is the duty of the Government to act for the interests of the Province. We are the owners of Canadian timber, and live in Michigan. We thank you for the curtesy of giving us a hearing. If proposed action were to refer only to future sales we would have nothing to say, but as to limits already sold we think there is practically a contract.

Limits were sold on the express understanding that logs should be taken away and manufactured. To change this now would be virtually a breach of contract. Such action would take away a large portion of value we supposed we had in those limits. We think we have not abandoned the idea of getting back to the $1 per thousand. If the question had been submitted alone, Congress would have gone for $1 per thousand, but, mixed up with other questions, it was not controllable.

Note.—Prior to the arrival of stenographer, notes were taken by Hon. Mr. Gibson up to this point.

It was possible that if this Government placed an export duty on logs the American Government might take the view that the law in the United States would reach to a prohibition of the importation of lumber, and they might be disposed to go as far as they could in that direction. In saying this, he did not want to be understood as throwing out any threat.

Another point was that there are a large number of $1 men, and the action would hit them peculiarly hard. Nothing would suit the $2 men better than an action of this kind.

One other very important matter to us is the question of having this matter determined early. If it is determined favorably, there will probably be from one and one-quarter to one and one-half millions paid in wages, and $200,000 to $300,000 in Crown dues this season. It is uncertain what action would be adopted if you take the other course.

There is another question which seems to be of peculiar importance, and that is, would the action apply to the licenses issued now or only to those to be issued next May? This is a very important question to have settled as early as possible.

When you are considering these questions, there is another point to be considered, It is said that Americans get the benefit of manufacturing this lumber, but if you will stop to consider you will see the Canadians cut the logs and get the amount, furnished supplies in addition. They get out of the labor at least $4.50 to $5.50 per thousand.

In answer to Mr. Gibson, Mr. Rich said it was the case that the American lumbermen who towed their logs across bought their supplies on this side. There would be the labor in the United States on the coal that was burned on the tugs, but, after that, $1 would be a very liberal amount to allow for labor in sawing. This is a matter well worth considering.

Then we are bringing our capital here and carrying out what we believe to be a contract made. Do not misunderstand me: I do not say that you have not a right to a change, but you did not change in the past, and when our people bought they did not think you would change or we would not have paid so much for the limits. I think that those who hold limits here have paid more for them than in the United States, and when you have invented a very admirable plan, in my judgment, to dispose of the timber. To a certain extent, the effect of this is to induce men to purchase to cut in the future. So I reason that if I pay more to-day than the timber is worth, it will come to that point in the future. I believe the timber stumpage in Canada has cost considerably more than in the United States, and I do not believe there is anyone but will bear me out in saying there is considerably more expense in getting the logs out here than in the case of the alluvial lands of Wisconsin and other western States.

In answer to Mr. Gibson, Mr. Rich promised to prepare a memo. and submit to the Government, giving the figures in detail showing how the $5.50 as against $2 was made up for Canadian and American labour respectively, the labour including cutting, skidding, putting into the water, floating down to the mouth of the river and putting into the storm boom. That was all done in Canadian territory, and largely by Canadian labour.

In answer to Mr. Gibson, Mr. Rich said it did not include the cost of towing. We pay, he said, 50 cents per thousand to tow the logs from the Georgian Bay, but in that there is not much labour anyway, beyond digging the coal.

Mr. Joseph Turner, Bay City, said: In our case, we employ entirely Canadian labour. We operate on the Wahnapitae and have limits on the French. We bought the limits expressly for the purpose of exporting the logs. We have been the friends of the Canadians in every place. We have worked hard on our own side to prevent the imposition of any duty on lumber. We thought best to co-operate with those who were trying to get a $1 duty and who did not advocate $2, as we knew the Government that were elected were pledged to a high tariff. We have not given up yet. We expect to make a fight next session again, and to do a great deal better than before. The conditions under which we got the duty were peculiar. Of course, there was a large influence against us. The sugar men said to the high tariff lumbermen if they did not vote for a high duty on sugar they would not vote for a $2 duty on lumber. We hope this year to overcome that. You understand what our position would be if our right to import the logs were taken away. It simply ruins our business entirely.

Mr. Hardy suggested that "suspends" would be a better word, which Mr. Turner accepted.

Mr. Turner went on to say that it is desirable to know as soon as possible what the result will be if we are to go on and cut logs this winter. We are prepared to cut and take out twenty-five million feet if we are assured that we

can do so. Except for the towing and sawing the money that is paid for this work all goes to the Canadians. We have bought the limits on the understanding that we could take the logs away and have paid a very high price for stumpage.

Mr. Smith, Cheboygan, said: I can substantiate what Governor Rich said in regard to the amount paid in actual wages. The Governor has put the rate too low, I think. He may get the work done by Canadian labour for $5.50, but it costs us at least $1 more per thousand in the last two or three years. I heard it remarked a few days ago. "You Yankees employ your own men," but that is not the case. Cheboygan is settled principally by Canadians. They may be naturalized; a good many are, some are not. The majority of the men are Canadians whether naturalized or not.

We operate below the Spanish. We have also a limit on the Mississauga and also on the White Fish. We have our teams and some supplies on the ground now, and are simply waiting. We have been waiting our Government in fear and trembling for three years. It was not a question with us of discrimination against Canada, it was a question to get something settled. Our business was very much depressed awaiting something being done by our Government. There came a time when something had to be done. The hope is that we may yet get free timber. We may not get that, but if we do not we will get a $1 duty. Labour and supplies were with us, all bought here and as to the labour question I figure that it costs us for labour and supplies from $6 to $7 per thousand actually paid to Canadian labourers. The work in actually sawing the logs amounts to a little over a dollar.

I am not taking into consideration the cost of our plant. It costs about 25 cents per thousand for tug men to tow the logs across the lakes. It costs 75 cents to $1 per M. for labour to saw our lumber in the mills.

In answer to Mr. Gibson, Mr. Smith figured out the $6 or $7 paid to Canadians as including cutting, skidding, river driving, and supplies. We bought our supplies principally at Collingwood. We bought our oats from Manitoulin Island and Collingwood, said to be of native growth. Our flour was bought at Kleinburg. Our groceries and all other supplies were bought principally at Collingwood.

Hon. W. L. Churchill, Alpena, Michigan, said: My line experience is probably a little different from any you have so far heard. I have not been a Canadian operator nor an owner of Canadian limits. I have been to a certain extent a purchaser of Canadian logs, and stand ready to purchase this season twenty-five million. I made an offer this season to purchase them. Last year I purchased five or six million and the year before also, and none this year. I am prepared to step in and purchase my entire stock of logs from Canada. Should any restriction be placed on these men to prevent them from selling or delivering their logs either in the form of a prohibitive tax or entire prohibition it means it would be striking a blow at your own people equally as much as at us. Whereas I have been a pine manufacturer for twenty-five years, I own limits of hardwood and hemlock and can continue the use of my mill and bring these woods into competition with pine, and I am here with this body of gentlemen representing that interest, to say that we desire to be permitted by the laws of your country to purchase this. The advantages arising to yourselves have been thoroughly gone over by Governor Rich, so that it is unnecessary to weary you with a multiplicity of figures. The statement of the cost of lumbering and sawing has been correctly represented to you. The purchaser of the supplies I am not very conversant with, personally, but know that these men purchase very largely in

your country, making you a revenue which would be taken away if the proposed action is taken. In my own heart I do not know if I could blame you for retaliating, but it is a matter of dollars and cents. A while ago you spoke of "Suspension." Did you stop to think what suspension would mean to your banks and others.

In answer to a question Mr. Churchill said he did not know whether the Canadian banks advanced money to American timber owners, but he knew that they did so in the case of Canadian owners

There is another point I would like to call your attention to, and that is would the two dollar American duty make any difference in the price of your lumber with increased prosperity in the States? Suppose there was an advance from 50 cents to $1.00 in wheat with other advances, and a better demand and that lumber should advance from $1.00 to $2.00 per thousand, would it not be better to take no action and make equally as much under a $2.00 duty as you were doing?

Another thing is that the entire South is covered with Georgian pine which is coming into general use now. You know that when a line of trade is once diverted into other channels, they are very likely to hold this trade, and if those gentlemen capture the trade of New York, Pennsylvania, Illinois, etc., it will be hard to get it back into these countries again. There is not only yellow pine but white wood and poplar.

Another point is that what we pay to the men in our mill for the production of lumber, is not to exceed $1.00 per thousand.

Hon. Albert Pack, Alpena, said: I will state my own experience in Canadian logging, I have mills at Alpena, Michigan, and five years ago this fall commenced logging on the Spanish River on a limit that was more than an average of accessibility, and in the five years I have lumbered moderately and have towed away about fifty million feet of logs including some lumber on the Wahnapitæ also. Then, I have in connection with the Mississauga limit, cut about thirty millions making eighty million feet in all. Those logs have cost in the lakes booms fully $5.50 including what was paid for the boom on the rivers.

Mr. Thomas Pitts, in answer to a question as to what fair specimens of logs had been selling for said from $9.00 to $10.50.

Mr. Pack, continuing, said: I have paid about $2.00 to manufacture at Alpena, and eighty to eighty-five cents to tow the logs across. I paid a good price on the stumpage and paid Crown dues, and have not quite received a new dollar for an old one.

Mr. Churchill reverting to the question which had been asked, said he had offered Hale & Booth $9.00 per thousand in the Georgian Bay waters for twenty-five million feet of logs, or $10.00 delivered in Alpena.

Mr. Pack, with reference to the purchase of supplies said, the first two years I bought some of our pork and beef in the United States. For the last three years every dollars worth of our supplies has been bought in Canada and the labour has been Canadian. The only other labour was that of a timekeeper or something like that. The common labour was all employed in Canada. I have made no money out of these limits, I have not lost any! I have done a great deal of business. If my own personal advantage was to be taken into account I think it would be fully as well subserved by you gentlemen putting an export duty on logs or making a provision that all Canada logs should be manufactured here. I have some timber in Canada. I do not expect to cut it

until trade relations are definitely settled. I have some lumber on the other side and I feel I would get the same advantage if this action were taken that is talked on that lumber as I might have from the Canadian lumber if it were not taken.

On the other hand Mr. Churchill stated a point that I was going to make. I believe very strongly in the remark, that if the southern timber merchants get possession of the market once, it would be very hard to recover that market. This collection of gentlemen here from the other side of the line elected the force at work in Washington who tried very hard to get a $1.00 duty on lumber. Some would have been satisfied with free trade in lumber. Others thought we had better try to restore the McKinley rate that is $1.00, and we came very near doing it. There were some combinations against us that succeeded. There was a wave of high protection, sentiments swept over the United States last session. We think some time in the future that will be changed.

In answer to a question as to whether General Alger had any pronounced opinions, on the matter, Mr. Pack said: "He is right with us in it." He stands as near to the President as any man in the Cabinet, and I think it would be a mistake to do anything to make the feeling more stringent We hope to overcome the high duty yet.

There is another point, that is that the gentlemen here represent one-half of the American logging interest in Canada. They would like to know where they stand. They have their camps and everything already to go on and cut more logs. I would like you to take that matter into consideration. I would like to prepare you a memorial of my views, and submit it to you in the course of a week or ten days.

Mr. Churchill referring to the question which had been asked as to Genera Alger's position said he happened to have a telegram in his pocket from his general superintendent, who had expected to be with the deputation, but was prevented by another engagement. In the telegram he wished them success.

Mr. Rich, reverting to the cost of labour, said: I think this would be a fair statement of the cost to the mouth of the river—stumpage $3, logging and driving $5, Crown dues $1, interest and incidentals $1 more.

Mr. Churchill—The statement that Mr. Rich made was for a poor class of timber.

Mr. Thomas Pitts, Bay City, said—There are just two points I would call your attention to, and I will do it as briefly as possible, because the proceedings are getting somewhat tedious. One is with reference to the expenditure of money. For the logs taken out, I believe every single dollar will be spent on Canadian labor. We can say that we can guarantee, if necessary, that that money shall be so expended. The next thing I want to say is that last November when we who own timber limits here heard that we were going to strike $2 lumber, we met together and opposed it tooth and nail, and thought the best we could do was to strike for $1 lumber, and we struck for that. We made a combination of about thirty firms engaged in towing logs from Cheboygon down to Detroit. We had plenty of money, and put up the best fight that has ever been put up in Washington. We only represented five per cent., (I believe not over 3½ per cent.) of the product of the United States, in fact. We went down to Washington and very nearly get a $1 duty in the face of the other 95 or 96½ per cent. I do not mean to say we were more brilliant or brainy or more able men than the men on the other side of the question, but I do claim that we had the best of it because we actually got a majority of the ways and means committee and the Senate

That was because we had a good cause, and we have a good cause still. We are enlisted for the war, and we are going to carry it on if you allow us to do so. It is the most unpopular piece of legislation that has ever passed, and I know it has lost them hundreds of thousands of votes. I know the President himself was in favor of $1. He stated it to a man who stated it to me.

Mr. Ross asked if they had 95 per cent. of lumber interests against them, how they were going to cut the duty down?

Mr. Pitts replied simply because we have the consumers on our side. I believe in the course of a year there will be a very great modification. We want to continue this fight, and in order to do it, we want to furnish ourselves with the sinews of war and we will be able to do it.

Mr. John Charlton asked whether an export duty on logs would have an unfavorable effect on Congress in securing a reduction to $1.00. Would it cause any irritation?

Mr. Pitts, most decidedly it would. It would prejudice the question very materially.

Hon. Frank Gilchrist.—In regard to the expense of lumbering in Canada, those who have spoken omitted to state one point, that part of the logs are towed with Canadian tugs, operated by Canadian labor. Some time ago I received a letter from Mr. Aubrey White, and I replied that three-quarters of the expense of converting the tree into lumber was paid for Canadian labor, and so far as putting an export duty on logs is concerned, I thought it was a question which should be studied thoroughly before making a movement. I am not interested in southern lumber, but our southern friends are opposed to receiving Canadian lumber in any shape, and they state that the duty ought to be $4. I think if the chance was offered to them to go ahead and extend their tariff clauses so as to prohibit Canadian lumber coming into the States, they would do it.

Mr. Churchill said one of the gentlemen actually made that statement at Washington. That was what they wanted. I want to answer one question. It was asked how we hope for success when we were only five per cent., and had ninety-five per cent. against us. We have seventy millions people, there are less than 1,000 lumber holders in the United States. Are seventy millions going to pay tribute to less than 1,000? I do not believe it.

Hon. Mr. Ross said they had been doing it for thirty years to sugar and other trusts, and there did not seem to be much hope of a change.

In answer to a question by Mr. Davis, who asked whether they thought the consumers would suffer much, Mr. Churchill said the 300 million feet of logs and 700 million feet of lumber that comes from Canada is only a drop in the bucket I do not think it would make much difference. What the southern people want is that you should put a $2 export duty on logs, then they will put on $2 more, and that will be $4 or $6 altogether, which would be a prohibitory duty. In reply to Mr. Ross's question, if the consumers would not stand $2 how would they stand $4? Mr. Churchill said the United States imported from Canada 700 millions of lumber and 300 millions of logs, as against 32 billions all told annually consumed in the United States. It would not affect the market to any extent.

Mr. Charles E. Mould: I want to answer personally for our institution by stating that our entire supplies are purchased in Canada. We purchase flour and meats of all kinds at Collingwood, hay and oats along the Manitoulin, wherever we can purchase them to the best advantage. We expend almost the entire amount expended here for Canadian labor. I want also to reiterate the idea

that the action talked of could in no sense harm anyone but the people who are friendly to the interests of Canada so far as the tariff measures are concerned, and would encompass the ends of the high tariff people who have been responsible for the $2 duty.

Mr. W. A. Charlton, M.P.P., thanked the Government for the kind hearing the deputation had received.

In conclusion the Premier thanked the deputation for the manner in which they had stated their views: promised on behalf of the Government full and fair consideration of the whole question: assured the gentlemen that the Government were well aware that the question was a serious one for the Province as well as for the American limit-holders, and referred to the strong feeling abroad here in favor of retaliation.

I certify that I took down the statements of the various speakers and the questions that were asked at the interview between the American lumbermen and the Government on the 7th September, 1897, in shorthand, and that the foregoing—with the exception of the first two paragraphs, which were taken by the Honorable the Commissioner of Crown Lands—is a true extension of my notes.

(Signed) J. I. McINTOSH.

FAVORED A LOWER DUTY.

Michigan Lumbermen Opposed to the Dingley Duty.

Efforts made to influence Congress in favor of a $1 Tariff.—Names of the Dealers Interested.

To the Editor of the Globe :

Sir,—We notice by the report of the lumbermen's meeting held in Toronto on the 7th inst., and also from criticisms in certain Canadian journals, that American holders of Canadian limits are accused of having favored the imposition of a $2 lumber rate, and of having procured for their own protection the export duty proviso of the Dingley Bill. The charge that Michigan limit-holders have not given their best efforts to securing a $1 duty upon lumber is most unfair and is without foundation, save in the case of a few individuals. The matter of agreeing upon a line of action with reference to the McKinley Bill lumber rates was taken into consideration by Michigan men at a meeting in Bay City in December last, and after full discussion it was decided that with the Republican Administration which was about to assume office at Washington it would be useless to make efforts to secure free lumber, and that it would be advisable to concentrate the efforts of the friends of free lumber upon the obtaining of a duty rate of $1. A subsequent meeting largely attended was held in Saginaw on January 28, 1897. This was a representative gathering. The Alpena delegates were: Mr. W. L. Churchill, Mr. Gilchrist, Mr. Fletcher and others. Cheboygan sent Mr. Pelton, Mr. Clark, Mr Smith, Mr. Nelson, Mr. Mould and others. Bay City sent Mr. Pitts, Mr. Selwin Eddy, Mr. Ben Boutell, Mr. Joseph Turner and others. Saginaw was represented by Mr. Walter Eddy, Mr. Love and Mr. Roys, Col. Bliss and others.

OPPOSED TO THE $2 DUTY.

This meeting expressed itself heartily in favor of adopting some plan to work effectively for a lower tariff on lumber than the proposed $2 rate. A committee was appointed to go to Washington, consisting of Mr. Churchill, of Alpena, Mr. Mould, of Cheboygan, Mr. Pitts, of Detroit, Col. A. T. Bliss, of Saginaw, and Mr. Fisher, of Bay City. It was at this time arranged that a meeting of those interested in the question should be held at the Russell House, Detroit, February 18, 1897. This meeting was duly held and the parties and firms interested in the lumber trade who were represented there were: A. T. Bliss, Saginaw Salt and Lumber Co., Loveland, Roys and Hoyt, Saginaw, Michigan; Eddy Bros. & Co., Saginaw Bay Towing Co., Turner & Fisher, Pitts & Co., South End Lumber and Salt Co., McClune, Bros & Co., Bay City, Mich.: Holland, Graves & Montgomery, Buffalo, N. Y; Whitney, Skillen & Barnes, Boston. Mass.; W. L. Churchill, Comstock Bros., F. W. Gilchrist, George N. Fletcher & Sons, Albert Pack, Alpena, Mich.; Thompson Smith's Sons, Swift & Clark, W. & A. McArthur, Pelton & Reid, Cheboygan; Alger, Smith & Co., D. Whitney, jun., Salliotte & Ferguson, Edmund Hall, Delta Lumber Co., Detroit.

The committee of five appointed at the Saginaw meeting, January 28th, 1897, made a report to this meeting recommending that the effort be extended and continued towards effecting the re-enactment of the McKinley schedule of $1 per M on white pine lumber. On roll call of the members present this recommendation was unanimously adopted, and, on motion of Mr. Pack, seven members were added to the original committee of five members, as follows: Albert Pack, Alpena; John Mullen, Black River, Mich.; Ben Boutell, Bay City, Mich.; L. P. Graves, Buffalo, N. Y.; P. Tibbetts, Boston, Mass.; R. Loveland, Saginaw; F. W. Gilchrist, Alpena.

The resignation of Col. A. T. Bliss as a member of the original committee of five appointed at Saginaw was then accepted, and ex-Governor John T. Rich was appointed to fill the vacancy. The committee was instructed by the meeting to take all necessary steps towards the accomplishing and carrying out of the views as expressed at the meeting, and were given full power to act. The general meeting then adjourned A meeting of the above appointed committee was then held at three o'clock in the afternoon at the Russell House, Detroit, Mich., when discussion was had as to the line of action to be adopted for carrying out the directions of the general meeting, and the following committees were appointed:—Finance—Messrs. Pack, Pitts and Mullen; Executive—Messrs. Proctor, Rich, Gilchrist and Churchill. A committee of five was also appointed, consisting of Messrs. Graves, Proctor, Turner Loveland and Mould, who were directed to attend the meeting of the Wholesale Lumbermen's Association to be held in New York about March 1st, for the purpose, if possible, of securing a resolution from that association in favor of the $1 lumber rate. The finance committee was authorized to make necessary assessments upon all the interests represented, to defray any expenses incurred by said committees. The executive committee were directed to meet with Mr. Proctor, chairman, in New York city, at as early a date as possible, and to take steps towards establishing permanent headquarters in Washington, with the necessary help, for the prosecution of the business of the committee. The committee then adjourned, subject to the call of the chairman.

Influencing Congress.

The executive committee proceeded to establish its headquarters at Washington, sustained by contributions from the parties whose names are given above. It is true that Col. A. T. Bliss, Walter Eddy and Eddy Bros, withdrew from the organization and declared in favor of a $2 rate, Mr. Walter Eddy, of Saginaw, at least having previously given pledges to the advocates of the $2 rate which he considered prevented his acting in concert with the lumbermen who desired a $1 rate. The executive committee maintained an active canvass in Washington and expended a large amount of money in disseminating information, paying the expenses of their delegation at headquarters, and seeking by distribution of documents and interviews to influence members of Congress. Their labors were so far successful that the Ways and Means Committee by a vote of eight yeas to five nays declared in favor of a $1 rate, and in the Senate the resolution of Senator Teller in favor of a $1 rate was passed by a vote of 31 to 30. The ultimate failure to secure the re-enactment of the McKinley proviso was due to the necessity for securing the support of the American lumber interests in favor of a $2 lumber duty for the tariff bill as a whole. The Michigan lumbermen in favor of a $1 duty through their executive committee did efficient work, and would probably have been successful in their efforts but for political exigencies which led the Republican friends of free lumber and of a low lumber rate to support the tariff bill as a whole rather than see the measure fail.

We assert that the insinuations thrown out with regard to the action and motives of Michigan lumbermen in this matter are not only unfair, but are entirely without foundation, and that their efforts have been honestly and efficiently put forth for the purpose of securing a lumber duty rate the best attainable under the circumstances, and one which would probably have been satisfactory to the Canadian lumber interest had it been obtained.

A Free Lumber Trade.

Under these circumstances we deeply deprecate the efforts that are being made to prejudice public opinion in Canada against the American holders of Canadian limits. Our interest is to have the lumber trade between the two countries unimpeded by legislative restrictions of any character. We desire the freest possible commercial intercourse established in lumber. Our party worked for a $1 rate believing that nothing better could be obtained. We worked for that rate honestly and with the greatest attainable degree of efficiency, and have by no means given up the contest, but are prepared to continue the effort; and we desire from those in Canada who should be our friends and stand shoulder to shoulder with us in this movement at least fair play and honorable treatment.

With regard to the interview recently accorded to a deputation of Michigan lumbermen and Canadian limit-holders by the members of the Ontario Government, we desire to say in addition to what has already been published with regard to that interview, that Premier Hardy, in replying to the representations of that deputation setting forth the injustice of a practical confiscation of their timber holdings in Ontario, gave no statement or indication whatever as to what the policy of the Government with regard to the matter under discussion would be. He stated that a very strong feeling existed in Ontario against the exporta-

tion of logs to the United States and against the provisions of the Dingley Bill, and he merely promised, in behalf of the Government, that the representations of the delegation should receive careful consideration.

(Sgd.) E. A. SMITH, Chairman.
O. M. CLARK, Secretary.

CHEBOYGAN, MICH., Oct. 13.

RESOLUTION ADOPTED.

At a meeting of lumbermen held at the New Cheboygan Hotel on October 13, 1897, the following firms were represented:—Thompson Smith's Sons, Pelton & Reid, W. & A. McArthur Company and Churchill Bros., Comstock Bros., F. W. Gilchrist, Albert Pack, Swift & Clark, and George N. Fletcher & Sons.

E. A. Smith was appointed Chairman and O. M. Clark Secretary.

Moved by D. C. Pelton and seconded by H. W. Swift, that the matter set forth in the document just read is the sense of this meeting and that it be approved and that the Secretary forward the same to the Toronto *Globe*, requesting them to publish it.

E. A. SMITH, Chairman.
O. M. CLARK, Secretary.

CHEBOYGAN, MICH., Oct. 15.

THE INTERVIEW OF THE MICHIGAN DELEGATION OF LIMIT HOLDERS WITH THE ONTARIO GOVERNMENT.

Mail and Empire, October 8th, 1897.

As representations have been made to the effect that the Michigan lumbermen who recently had an interview with the Ontario Government desired to keep their proceedings and representations secret, the members of the delegation have authorized a report of those proceedings and representations, which at the time were considered by them to be of a business, rather than of a public character, but against the publication of which no good reason can be urged.

The delegation consisted of Hon. T. Rich, ex-Governor of Michigan; Thomas E. Pitts, and Hon. Albert Pack, of Detroit; E. A Smith, Charles W. Mould, H. W. Swift, and O. M. Clark, of Cheboygan, Mich.; Joseph Turner, of Bay City, Mich., and G. R. Nickleson, of Cleveland, Ohio. The delegation was received by Premier Hardy, Hon. G. W. Ross, Hon. Mr. Davies, Hon. J. M. Gibson and Hon. William Harcourt. Ex-Governor Rich was first introduced to the Council and proceeded to make a statement with regard to the effect of taking action by prohibiting the export of logs cut upon Ontario limits. He reminded the Council of the fact that limits had been purchased by Americans at exorbitantly high prices, and that at the last sale before the one recently held, the Government realized for the properties put up at auction sums greatly in excess of their expectations. These limits had been sold subject to no conditions as regarded the export of logs. They had been bought by the American holders in the majority of instances for the purpose of exporting the logs. This business has been permitted to continue without protest or hindrance for many years past, and the imposition of the order now asked for by interested parties in Ontario would be equivalent to confiscation of their property, as they could not then export their logs and they would not dare to make provisions for the manufacture of these logs in Canada, as beyond question retaliatory action on the part of Congress would result, which might go to the extent of prohibiting the importation of lumber into the United States from any country prohibiting the export of sawlogs to the United States. They could not hope for more favorable treatment from the Washington Government than would be given under the imposition of an export duty, and the result no doubt would be to place them in a position where they could not export their logs, and where to convert them into lumber in Canada for export to the United States would be simply ruinous by reason either of tax or prohibition.

The Governor dwelt at some length upon the character of the efforts made by Michigan lumbermen interested in Canadian limits to secure a duty of $1 per M under the Dingley bill. This, he represented, was the utmost that they deemed it reasonable to hope they could secure. An organization had been formed for this purpose; diligent and well sustained efforts had been put forth, and that organization was still in force with funds in hand, and was prepared to prosecute the work with greater hopes for success when Congress met again.

Ex-Governor Rich then proceeded to point out that the proposed action of the Ontario Government would serve most efficiently the purposes of that portion of the lumber interest in the United States that demanded and secured the $2 duty while it would mean ruin to that portion of the American lumber interest, interested in Canadian limits, which was friendly to free lumber, and was prepared to use its influence to the utmost of its ability for securing free lumber, or a reduction of the lumber rate.

The Governor also alluded to the assertions made that the loss to Canada in not having logs manufactured in this country was a very serious one, by stating that the actual labour cost of the conversion of sawlogs into lumber fell considerably below $1 per M, and that the increased labour cost in putting logs in shape for towing to the United States in rafts in place of sending them to Canadian mills amounted to quite a material sum per M feet; he asserted that the bulk of the cost of lumber was incurred in getting the logs to the mouth of streams; comprising cost of lumbering in the woods; delivery at the skidways; running down streams, and preparing for shipment. As regarded the cost of lumbering, he represented that it was very much higher in Ontario than either in Michigan, Wisconsin or Minnesota, owing to the rugged, rocky character of the Ontario timber region, rendering heavier cost for roads necessary, and preventing the drawing of as heavy loads owing to the inequality of the ground. He estimated the excess cost of lumbering in Ontario as compared with the pine region of Michigan at not less than 30 to 40 per cent.

The Governor dwelt with considerable force upon the effect that the proposed course would have upon Congressional action, and said that it would not fail to provoke intensely bitter feeling. The proposition to practically confiscate 4,000 square miles of timber holdings in Ontario held by American citizens would certainly invite and secure Congressional action of a character more or less decided, in the nature of a reprisal, and as for himself he felt that the consequences of prohibition of log export could not be less serious to the Canadian lumber interest, than would be the consequences under the present proviso with regard to export duties, if such were imposed.

With no interference with the course of trade the Governor stated that the revenues of the Province of Ontario from Crown due would suffer little or no diminution, but if such interference should take place, the shrinkage of revenue resulting from the cessation of American operations would be a large one. He urged that it was important to know now what action the Government proposed to take, and as to whether that action would apply to the present season's operations, as parties intending to go into the woods needed to know very soon, if not placed at great disadvantage in arranging for their winter operations.

Joseph Turner, of Bay City; Thomas Pitts, of Detroit; E. A. Smith, of Cheboygan; Hon. W. L. Churchill, and Hon. Frank Gilchrist, of Alpena, also addressed the Council, and presented substantially the views that had been presented by ex-Governor Rich. These gentlemen dwelt upon the friendly attitude the Michigan men interested in Canadian limits had maintained toward the Canadian lumber trade by making efforts at great cost in money and time to secure a $1 lumber rate. They asserted that these efforts had not been given up, and would be continued at the coming session of Congress, and in the meantime they deprecated any course of action taken by the Province of Ontario, or the Dominion Government that would increase the feeling of irritation that already existed between the two countries upon this subject. They asked to have the matter let alone until it could be ascertained what effect would be produced by further efforts in the direction of securing more liberal provisions from Congress with regard to the importation of Canadian lumber. These gentlemen also represented that in their operations they employed very few American laborers, and bought their supplies almost exclusively in the Canadian markets, and that regulations requiring them to employ Canadian labor, and purchase Canadian supplies, would be quite agreeable to them.

The tone of the representations made by these gentlemen was friendly and in excellent spirit. They approached the Government stating that the American impression with regard to Canadian legislation was that a spirit of justice and fair play governed Canada; that they came simply to present their claims on the basis of justice and fair play; that they had been practically invited to invest large sums of money in Canadian lumber properties; that the conditions and circumstances under which these investments were made, conveyed to them the impression that they would be allowed to make use of the property their money had purchased to the best advantage possible; that after having made the investments, and having for years enjoyed the privileges they expected to enjoy when the investments were made, they most respectfully urged upon the Government to consider the obvious injustice of confiscating their property, as would be done if the proposed order were issued.

TORONTO, October 11th, 1897.

Hon. J. M. Gibson, Commissioner of Crown Lands, Toronto:

SIR,—By direction I have the honor to place in your hands copy of resolution adopted at a meeting of the lumbermen of the Province of Ontario, held in the rotunda Board of Trade building, on the 6th inst, and in so doing I am, on behalf of those interested, to express the hope that the same may receive your early and favorable consideration.

I have the honor to be, sir,
Your obedient servant,

EDGAR A. WILLS,
Secretary.

RESOLUTION PASSED AT A MEETING OF THE LUMBERMEN OF ONTARIO, HELD IN THE ROTUNDA, BOARD OF TRADE BUILDING, OCTOBER 6TH, 1897.

Moved by Mr. John Bertram, seconded by Mr. James Scott:

That whereas at a meeting of the lumbermen held at Toronto, 19th August last, it was resolved to present to the Government of Ontario the following declaration:

"That in the opinion of this meeting the exportation of saw-logs should be restricted;

"'And with that object in view, the Government of the Province' of Ontario be requested to so amend the Pine Timber Regulations that 'all pine timber cut under license in the Province of Ontario shall be' manufactured in Canada;"

And whereas the Committee appointed to wait on the Government to urge the adoption of the resolution have obtained from the Commissioner of Crown Lands an answer to the following effect:

"That the Government entertain the opinion that during the 'currency of the existing licenses such action as was proposed by the' resolution of the meeting of August 19th could not well be taken. I may 'say, however, that the Government are very carefully considering what' policy should be adopted with reference to logs cut after the expiration of the existing licenses; and it is hoped that in a short time, the public will be made aware of the course which may be determined upon.'"

Be it therefore resolved, that, without expressing an opinion on that part of the Government policy relating to current licenses, we declare it to be in the public interest that when new licenses are issued after April 30th, 1898, a regulation be included in every license that all timber on the Crown Lands of Ontario shall be sawn, made into square timber, or otherwise manufactured in Canada.

That a copy of this resolution be sent to the Members of the Government of Ontario and to every member of the Legislative Assembly, and that all who approve of this policy use every legitimate effort to have it carried into effect.

Carried by 42 for, to 4 against.

JOHN I. DAVIDSON,
Chairman.

EDGAR A. WILLS,
Secretary.

TORONTO, October 12th, 1897.

SIR,—I am directed by the Honourable, the Commissioner of Crown Lands, to acknowledge the receipt of your letter of 11th instant, enclosing copy of a resolution passed at a meeting of the lumbermen of the Province, held in the Board of Trade Building on 6th October instant, and to assure you that such resolution will be submitted to and receive the careful consideration of the Government.

Yours truly,

Private Secretary.

EDGAR A. WILLS, ESQ.,
Secretary Board of Trade,
Toronto.

Toronto, October 13th, 1897.

My dear Sir,—The Commissioner of Crown Lands has already acknowledged the receipt of the resolution passed at the meeting of lumbermen held in the rotunda of the Board of Trade Building, on October 6th, and which was forwarded to him by Mr. Wills, the Secretary of the Board of Trade. The Government have had under consideration for some time past the question to which the resolution relates, and in that connection the resolution of the earlier meeting, which was presented by Messrs. Waldie, Rathbun, Scott and Bertram. What I understand is that the majority of both meetings desired that a new regulation be passed by Order-in-Council which will require all pine timber cut upon Crown Lands to be manufactured into boards, or other sawn lumber, or into square, waney or board timber, in Canada; and that this regulation shall apply to timber cut upon all limits, including those which were originally sold by the Crown without the imposition of that condition. The proposition is a very large one, and the suggested course is not free from legal complications. It is learned that the lumbermen of the western part of the Province are almost unanimously in favour of the proposition, while some of the larger operators and some of those who do not operate so largely, in the eastern part of the Province, are adverse to it

It has been urged upon the Government, in opposition to the resolutions, that the adoption of such a regulation would affect very seriously large timber interests held by both Canadians and Americans, and that individual holders would suffer serious loss; and it is represented that the aggregate depreciation in value could only be approximately estimated.

The question, therefore, as I have already intimated, assumed very large proportions, and is, the Government cannot but feel, too weighty and momentous to be dealt with simply by Order-in-Council, without publicity and in the privacy of the Council Chamber, and the more so as the intent of the resolution is that the regulation shall apply to the timber on all limits without reference to the length of time which has elapsed since the latter were sold by the Crown, or to the prices at which they have since been purchased.

After very full consideration, we are of opinion that the question is one of such gravity and importance as regards both public interests and private rights, that, instead of dealing with it by Order-in-Council, the Legislature at the approaching session should be asked by the Government to enact such legislation as the public interests may require and the exigencies of the situation may appear to demand, in which case the whole question may be fully and openly discussed before definite action is reached.

The Legislature will doubtless meet early enough to enable any necessary measures to be passed before the time arrives for the issue of the licenses for the next license year.

I am, etc.,

Very truly yours,

(ad.) Arthur S. Hardy.

Col. J. I. Davidson,
Toronto.

PAPERS PRESENTED TO THE EXECUTIVE COUNCIL BY MR. SCOTT AND MR. WALDIE ON DECEMBER 10TH, 1897, AT AN INTERVIEW REPORTED IN CITY PAPERS ON THE 11TH DECEMBER:—

PAPER PRESENTED BY MR. SCOTT.

TORONTO, December 10th, 1897.

"*To the Honorable the Attorney-General and his Colleagues.*

"The importance of the question to all lumbermen in western Ontario is our justification for again waiting on you to present our views and ask for your favorable consideration to the resolution passed by a representative meeting of lumbermen held at Toronto, October 6th, where it was declared to be in the public interest 'that when new licenses are issued after April 30th, 1898, a 'regulation be included in every license that all timber cut on the Crown lands 'of Ontario shall be sawn, made into square timber or otherwise manufactured 'in Canada.'

"We deem the present an opportune time for now offering you some reasons why we ask your Government to take this course.

"1. The retaliatory clause of the Dingly bill passed by the United States has made it difficult for the Dominion Government, without grave hardships and dislocation of trade being threatened, to place an export duty on saw-logs.

"2. Under present conditions of free logs for export and a duty of $2 per M. feet, sawing on the Georgian Bay for the American market could not be continued, the business of sawing lumber would of necessity be transferred to Michigan.

"3. This would effect not only Canadian operators, but also Americans who have established their saw-mills in Ontario and who are certainly entitled to consideration.

"4. It would be a ruinous policy to provide the raw material free from our forests for competition against our own mills, who would be handicapped by the $2 duty.

5. If the exportation of logs cut on Crown lands was entirely stopped Canadian lumbermen would enter no complaint of the $2 duty, considering it entirely a matter under the jurisdiction of the United States.

6. While fully recognizing the rights of proprietorship both of Canadians and Americans in all licenses issued by the Crown, we consider the retaliatory clause an interference with our rights, and as Americans have induced the situation it is for them to apply the remedy.

7. What Canadian lumbermen want is simply equality and fair play in the work of utilizing the product of their own forests.

8. If a duty of $2 is charged on lumber entering the United States then an equal export duty should be charged on logs.

9. Until the privileges contemplated by clause 7 be enjoyed the only remedy is to prohibit the export of logs cut on Crown lands and place American stumpage owners on the same footing as Canadians.

10. Whenever, therefore, an equilization of conditions is brought about the embargo placed on the export of logs could be taken off.

J. Scott,
E. W. Rathbun,
John Bertram,
J. & T. Conlon,
W. J. Sheppard,
Huntsville Lumber Co., Limited,
Wm. Turnbull, Secy.,
Wm. Irwin,
Thos. H. Sheppard,
The Imperial Lumber Co., Limited,
C. D. Warren, President.
Jas. Playfair,
Chew Bros.,
J. S. Playfair,
Burton & Bro

PAPER BY MR. JOHN WALDIE.

Toronto, December 9th, 1897.

Honorable A. S. Hardy and Colleagues, Parliament Buildings, City:

Gentlemen,—Since our last interview the request embodied in the resolution appointing us as a committee, viz.: That all sawlogs cut from crown lands under license should be manufactured into lumber or square timber in Canada, has been very thoroughly discussed from all its various standpoints, and we have to thank your Government for the kindly intimation contained in the Speech from the Throne, that you purposed taking steps to meet the conditions that at present govern operations on the Georgian Bay.

Now the object of our present interview is to ascertain whether we desire any changes, or whether we remain as before, strenuously urging the position we then took, namely, that modifications should be made in the conditions upon which timber is cut on the Crown lands under license, so that hereafter all the sawlogs would be manufactured in Canada.

I personally desire that this shall be carried out to the fullest extent.

1st. As I believe it is the only means by which we can retain any portion of the business of sawing lumber in the Georgian Bay, and prevent the depopulation of our towns in that district.

2nd. It is the only available means that will tell as a factor if Michigan mill men desire to influence legislation at Washington. The lumbermen of Canada having already asked the Dominion Government to take power to put an export duty on logs, and that power not being exercised, has prejudiced the position of Michigan men at Washington, who ask that the agreement covering the $1 duty on lumber and free logs between the two countries should be restored, and I firmly believe that an absolutely restrictive condition should be inserted in all the licenses that will be issued on the 30th April next, and to prevent if possible the impression that has by some means obtained a footing in the United States, that Canada will do nothing to retain the manufacture of the log within the Dominion.

3rd. If the Georgian Bay is to obtain a fair share of the export trade to England it must be by increasing the manufacture at certain points, so that a sufficient quantity can be supplied for the foreign trade in competition with such points as Albany, Tonawanda and Saginaw. What the English buyer requires is to get a large quantity of a certain class of lumber at one point, and this condition not only applies to the lumber trade but to all other manufacturing industries in Ontario which are looking to an export market for their products.

The foreign trade (and when speaking of the foreign trade I mean other than the United States) requires prompt deliveries of large quantities, and in view of the recent speech by President McKinley in the opening of Congress, it

would appear that the Government at Washington desire that the present Dingley bill shall have what they consider a fair trial. We are, therefore, justified in believing that there will be no change in the lumber or any other of the schedules for at least a couple of years.

To enable our mills on the Georgian Bay to conduct their business with a view of capturing the markets of the world, some additional outlays will be necessary, such as the erection of dry-kilns, and in some instances putting in a more modern plant. Therefore it is desirable that the change of the conditions in the licenses should be a statutory condition.

Further, I consider that in view of the continuance of the Dingley bill, and possible irritation, that there should be no reference made in the licenses to be issued as to the employment of Americans in any position as hitherto in any of Britain's dealings with the United States where privileges have been granted the United States have construed them into rights to be maintained, and I would regret that any words in the licenses should be made the ground-work of an argument that the Americans had vested rights in the crown timber of Ontario.

I am therefore prepared to stand in support of the Government legislating to the fullest extent on the lines of the resolution of the lumbermen's meeting, and would exceedingly regret that any lumberman should ask the Government to enact conditions that they would not firmly uphold.

I further believe that future transfers of the right to cut timber on the Crown lands should only be made to Canadian citizens or to those who agree specifically to manufacture in Canada.

Yours truly,

JOHN WALDIE.

LETTER FROM MILTON CARR, ESQ.

HONORABLE A. S. HARDY,
Premier of Ontario,
Toronto, Ont.

HONORABLE SIR.—I notice in the public press, that it is your intention to present, for the approval of Parliament, certain amendments to the Timber Regulations. There is an able-bodied rumor, that among the new regulations will be one, which will practically prohibit the exportation of saw logs, by stipulating that all logs cut from the Crown Lands, under license, must be manufactured into lumber or square timber within the Province of Ontario. I trust you will not deem it presumption if I discuss this proposition from the standpoint of a country merchant, resident in the district where the said timber is cut and manufactured into saw logs. Our welfare and business existence is closely allied to and bound up in that of the farmers, who are, with much toil and many hardships, developing the agricultural possibilities of the district.

These farmers depend to a great extent, almost absolutely, upon the lumber camps for a market for their produce. The higher prices which the nearness of those camps enable them to obtain for their produce, in some small measure, compensates them for the added toil and expense in cultivating the newly cleared and rocky land. So long as the district is compelled to import a large portion of its agricultural supplies, the lumberman must pay the prices at the front with transportation added, and this is the price the Muskoka farmer gets. We are, therefore, much alarmed at the suggestion to so hamper and restrict the business of log-makers that they will be compelled to seriously curtail, if not entirely stop, their operations in the woods. No one will seriously contend that the proposed

stipulation will not accomplish this result. I am satisfied that it is expected to do so by those who are urging its adoption.

The cunning old foxes, who have become wealthy by purchasing the people's pine at a fraction of its value in years past, see that the competition of the foreign bidder has doubled and tripled the bonuses paid at Government sales. They need no one to tell them that their claim, that the proposed stipulation will force the Americans to saw the logs in Canadian mills and thus build up the Georgian Bay cities, is the veriest "rot," for do they not give as a reason for their complaint, that the Dingley tariff makes it impossible to run these saw mills, on the bay, at a profit since they must sell in the American market. Do they ask us to believe that the "Yanks" can and will saw lumber at a loss? Or do they think the "Yankees" can run those saw mills at a profit while the Canadians, themselves, show a loss? Oh! no, these astute old business men know better—they know that restricting the exportation of logs will reduce the quantity of logs made—will drive the "Yankee" exporter out of the business of log-making and timber buying. As a necessary result the value of limits will decrease, the lessened demand for labor in the woods will lower the price of that labor, as well as the price of all the supplies used by the lumberman. They care nothing about the decreased revenue of the Government from licenses, while they by reason of the lessened cost of producing lumber increase their individual revenue. They care nothing about the starvation price which farmers will receive in being obliged to sell their produce in a glutted market. The experience of the past winter, when from other causes the operations of foreign lumbermen were much reduced, has taught the inhabitant of the lumber districts what he has to expect from the "tender mercies" of the Canadian operator when his foreign competitor is driven out of the woods.

The history of all the lumber regions is the same; the lumberman's axe must precede the plough: shanty prices must tempt the hardy farmer to endure the hardships of frontier life, while he creates a farm from the newly chopped lands. The winter wages in the woods furnishes him with funds with which to subdue the obstinate soil during the summer. Drive out the lumberman, and the farmer seeks a more favored locality, where if the prices are lower, the cost of production is proportionately lessened.

It is well known that some of these Canadian lumbermen, agitating this scheme, have sold limits, formerly purchased from the Government at very low prices years ago, to American buyers at immense profits, and have become even millionaires in this way. Now, they want the Government to drive these very men out by special legislation in their behalf so they can get cheap pine again, which will surely follow if these stipulations and restrictions are put in force. If the Government wants to make the most out of the people's birthright for the people, sell their pine lands on the public square, after having it well advertised, by public auction, open to the whole world without any stipulations or restrictions other than to the highest bidder. Every one will admit that the above stipulation of all pine to be manufactured in Canada will help three or four places on the Georgian Bay, but we cannot all go there to reap a part of the little harvest that the rest of Canada are to pay for through their ears by the decrease of the price of limits, men's wages and farmers' products. It is almost needless for me to say that the more restrictions and stipulations you put in the conditions of sale of any article, the less you get, while on the other hand the more liberal you make the conditions of sale the more you enhance the value. Place that stipulation on the conditions of sale of the timber lands in Canada, and no Canadian of limited means could buy or bid at a sale of the Crown Lands timber no matter how small the berth, as he could not sell his logs to foreigners, and

being unable to manufacture his products one-half way to the market he has to step down and out, and the millionaire lumberman gets his limit at his own price. The Government only has to refer back twenty years ago, before rafting logs in bags across the Georgian Bay became a success, and it will find that limits were sold to Canadian buyers for very very small figures, I might say a song, but the moment American competition stepped in at the sale of Crown Lands the Government began to get prices that were said to be fabulous. I have too much confidence in the honesty and ability of a Canadian Parliament to believe that they will legislate in any way to interfere with the open competition in our market in the way proposed.

In conclusion I would just ask you to mark my words, that if this legislation is passed to please about twenty-five Canadian lumbermen, who claim to be so philanthropically working for the interests of Ontario, and who innocently and lamblike claim that this legislation would not be of interest to themselves, you will hear one of the greatest 'squeals" from the banking fraternity that was ever heard in the country. I venture the assertion, that two-thirds of the money used by Americans in lumbering in Ontario is put up by Canadian bankers, and the depreciation in the price of limits that will follow as the changes proposed, will depreciate their security to such an extent, that they will move Heaven and earth to have it repealed.

Trusting that your Government will weigh well this matter before you act,

I am, Honorable Sir,

Your obedient servant,

(Signed) MILTON CARR.

Trout Creek, December 11th, 1897.

Globe's Report of Proceedings at Interview on 10th December.

From Toronto Globe, 11th December, 1897.

An influential deputation of Canadian lumbermen waited upon the Ontario Government yesterday and presented that view of the timber question which favors the imposition of such a restriction on limit-holders as will compel the manufacture of logs in this country. There was not absolute unanimity among the members of the deputation, but a compromise statement was presented. It was urged that if a duty of $2 is charged on lumber entering the United States an equal export duty should be charged on logs, but as the retaliatory clause of the Dingley Act has made it difficult for the Dominion Government, without grave hardship and dislocation of trade being threatened, to place an export duty on logs, the only remedy is to prohibit the exportation of logs. This suggestion was qualified by the provision that whenever conditions are equalized as between Canadian and American lumbermen the Government should remove the embargo. It was proposed that in any legislation adopted the Government should reserve power to do this without resorting to Parliament.

Statement of the Case.

Ald. Scott was the first to address the Ministers. He presented the following memorandum:

Toronto, Dec. 10, 1897.

To the Honorable the Attorney-General and his colleagues:

The importance of the question to all lumbermen in Western Ontario is our justification for again waiting on you to present our views and ask for your favorable consideration to the resolution passed by a representative meeting of lum-

bermen held at Toronto, October 6, where it was declared to be in the public interest 'that when new licenses are issued after April 30, 1898, a regulation be included in every license that all timber cut on the Crown Lands of Ontario shall be sawn, made into square timber or otherwise manufactured in Canada."

We deem the present an opportune time for now offering you some reasons why we ask your Government to take this course.

(1) The retaliatory clause of the Dingley bill passed by the United States has made it difficult for the Dominion Government, without grave hardship and dislocation of trade being threatened, to place an export duty on saw logs.

(2) Under present conditions of free logs for export and a duty of $2 per thousand feet, sawing on the Georgian Bay for the American market could not be continued; the business of sawing lumber would, of necessity, be transferred to Michigan.

(3) This would affect not only Canadian operators, but also Americans who have established their sawmills in Ontario, and who are certainly entitled to consideration.

(4) It would be a ruinous policy to provide the raw material free from our forests for competition against our own mills, who would be handicapped by the $2 duty.

(5) If the exportation of logs cut on Crown Lands was entirely stopped Canadian lumbermen would enter no complaint of the $2 duty, considering it entirely a matter under the jurisdiction of the United States.

(6) While fully recognizing the rights of proprietorship, both of Canadians and Americans, in all licenses issued by the Crown, we consider the retaliatory clause an interference with our rights, and as Americans have induced the situation it is for them to apply the remedy.

(7) What Canadian lumbermen want is simply equality and fair play in the work of utilizing the product of their own forests.

(8) If a duty of $2 is charged on lumber entering the United States, then an equal export duty should be charged on logs.

(9) Until the privileges contemplated by clause 7 be enjoyed, the only remedy is to prohibit the export of logs cut on Crown lands, and place American stumpage owners on the same footing as Canadians.

(10) Whenever, therefore, an equalization of conditions is brought about the embargo placed on the export of logs could be taken off.

This statement was signed by Messrs. J. Scott, Huntsville Lumber Co., N. Turnbull, Secretary; E. W. Rathbun, Wm. Irwin, John Bertram, Thos. M. Sheppard, The Imperial Lumber Co., C. D. Warren, President; J. & T. Conlon, James Playfair, W. J. Sheppard, Chew Bros., Burton Bros., and J. S. Playfair, on behalf of the deputation.

Don't Take Back Anything.

Ald. Scott supplemented the statement with a few observations. He said that the lumbermen of the Province had not changed their views in regard to this matter, and did not take back or modify anything that they had said on former occasions. On the contrary, they reiterated what they had said before, and asked that it be considered in the legislation which was to be introduced. The lumbermen distinctly objected to the disadvantageous position in which they had been placed by American legislation, and he, for one was prepared to assist

the Government in applying a remedy not only in regard to future licenses but in regard to licenses existing at present. However, there was not a unanimity amongst the lumbermen on this subject, and the latter feature of the case was left out of the question. The deputation was present simply asking that, in view of the legislation about to be introduced, proper provisions be made by which the Government may promptly act in removing any embargo the Legislature might put on the export of logs whenever the Americans placed the Canadian lumbermen on an equality with themselves.

Mr. Gibson.—How will that secure the manufacture of lumber in this country?

Ald Scott replied that he had never taken the position that Canadians were not willing to trade with the Americans under a free exchange of forest products. He did not think the lumbermen of the country took the view that under no circumstances should the export of logs be permitted.

Mr. Gibson.—The Government are being told every day that every log should be manufactured in this country.

Ald. Scott said that he did not think that the former deputation urged that there should be no exception to the rule. They were placed at a great disadvantage because of United States legislation, so much so that they could not do business profitably.

Mr. Ross.—You are not urging a manufacturing clause except on account of the retaliatory clause in the Dingley tariff?

Ald. Scott.—That is the point. The lumbermen of Canada would not have raised this question at all had it not been for the action of the United States.

Mr. Thomas Gibson, M.P. (Huron), asked how many actions of the Ontario Legislature would compel a reversal of the policy of the United States?

Ald. Scott's answer was that the lumbermen did not expect to compel the United States to do anything, but they held that if the United States adopted a policy to prevent Canadian lumbermen doing a profitable business, American lumbermen should not be permitted to enjoy the advantage of the raw material owned by this Province. Canadian lumbermen required the markets of the world, but the American market was closed against them. That being the case, this Province should not allow the Americans, by their own act, to so tie the hands of Canadians that they could do nothing, while they took our raw material to the United States, and made a large profit out of it.

Mr. Hardy got a plain statement from Ald. Scott of the desire of the lumbermen that power should be reserved by the Government to remove any restrictions that might be imposed without resorting to legislation, should it become advisable in case the United States revised its course.

An Open Market Wanted.

Mr. John Bertram informed the Government that there was not a perfect unanimity of opinion amongst the members of the delegation. Speaking for himself, he said that he was strongly of the opinion that the best policy for Canada was one that would let the American people who had purchased timber in this country to take it away and do what they pleased with it as being their own property. A policy that would secure the free entry of all our products into the United States would be in the interest of the people of Canada. There was a large quantity of timber other than pine, such as spruce, hemlock and

cedar, standing on the lands which had been sold, the cutting of which into ties, posts and other articles would give work to Canadians If free entry into the United States market could be secured for this, great advantage would result to this country. The utilization of the coarse products of the forest with free entry into the United States would be worth more to the country than all the logs that Americans had purchased. The deputation was obliged to come to the Ontario Government and ask for relief instead of going to Ottawa, because the retaliatory clause of the United States tariff would put $4 a thousand feet on timber instead of $2.

Home Manufacture.

Mr. E. W. Rathbun strongly advocated the adoption of such a policy as would induce the manufacture in Canada of the forest products. He prefaced his remarks by stating that the proposal presented by Ald. Scott was a compromise measure. It was, he said, the mildest course that they were recommending the Government to adopt in dealing with the question. Personally, he went further than was suggested in the paper. The amount of marketable timber the Province had standing should not govern the consideration of the question, but it should be looked at from the point of view of the available supply of the world. The supply in the United States and the old world being limited, and there being a constantly increasing demand for forest products in the markets of the world, he held that we were justified in insisting that our timber should be manufactured in Canada. He approved of the principle of making no restriction in the sale of timber limits, as it was desirable that capital should be induced to come into the country. If it were made a condition that the timber should be manufactured in this country, the transfer of capital and enterprising men from the United States to Canada would be greater than ever before.

Mr. Hardy propounded the question as to whether the Michigan lumbermen, being a very powerful body in their own State, might not by appealing to the Legislature of that State, secure measures not procurable at Washington, which might be retaliatory in their effect. For instance, might they not place obstacles in the way of international railway traffic?

Mr. Rathbun replied that these were questions that must be taken into consideration He expressed himself strongly as opposed to retaliation. We had, he said, to get on broader ground than anything that savored of retaliation. In reply to a question by the Premier, Mr. Rathbun said that he did not believe the imposition of restrictions such as he had suggested would produce a slump in the prices of our limits, because in a very few years the Americans would be dependent upon this country for all the white pine they required. As to the suggestion that Michigan might discriminate against Canadian railways, he did not anticipate any danger on that score. He would throw open the St. Lawrence route to everybody, and that would counterbalance all the privileges accorded Canadian railways by the United States.

Mr. Waldie's Reasons.

Mr. John Waldie, before addressing himself to the consideration of the question in hand, alluded to the point that had been raised as to the possibility of reprisals on the part of the Michigan Legislature. He was of the opinion that railway control, involving interstate traffic, was a matter of Federal jurisdiction, and therefore beyond the powers of the State authorities.

Ald. Scott said that the Americans only tolerated Canadian railways because they served the purposes of localities in the United States. If they did not require our railways they would have prohibited them long ago.

Mr. Waldie made the statement that there was not one dollar in ten employed by Americans in the Canadian forests but was loaned by Canadian banks.

Mr. Hardy said that restriction would hurt Canadian banks rather than Americans.

Mr. Waldie replied in the affirmative. He then proceeded to give his reasons for advocating the adoption of a regulation that all sawlogs shall be manufactured in Canada. He said:—

I believe it is the only means by which we can retain any portion of the business of sawing lumber in the Georgian Bay, and prevent the depopulation of our towns in that district.

It is the only available means that will tell as a factor if Michigan mill men desire to influence legislation at Washington. The lumbermen of Canada having already asked the Dominion Government to take power to put an export duty on logs, and that power not being exercised, has prejudiced the position of Michigan men at Washington, who ask that the agreement covering the $1 duty on lumber and free logs between the two countries, should be restored. And I firmly believe that an absolutely restrictive condition should be inserted in all the licenses that will be issued on the 30th of April next, and to prevent if possible the impression that has by some means obtained a footing in the United States that Canada will do nothing to retain the manufacture of the log within the Dominion.

If the Georgian Bay is to obtain a fair share of the export trade to England it must be by increasing the manufacture at certain points so that a sufficient quantity can be supplied for the foreign trade in competition with such points as Albany, Tonawanda and Saginaw. What the English buyer requires is to get a large quantity of a certain class of lumber at one point, and this condition not only applies to the lumber trade, but to all other manufacturing industries in Ontario which are looking to an export market for their products.

For Two Years at Least.

The foreign trade (and when speaking of the foreign trade I mean other than the United States) requires prompt deliveries of large quantities, and in view of the recent speech by President McKinley at the opening of Congress, it would appear that the Government at Washington desire that the present Dingley bill shall have what they consider a fair trial. We are therefore justified in believing that there will be no change in the lumber or any other of the schedules for at least a couple of years. To enable our mills on the Georgian Bay to conduct their business with a view of capturing the markets of the world some additional outlays will be necessary, such as the erection of dry kilns and in some instances putting in a more modern plant. Therefore it is desirable that the change of the conditions in the licenses should be a statutory condition.

Further, I consider that in view of the continuance of the Dingley bill and possible irritation, there should be no reference made in the licenses to be issued as to the employment of Americans in any position, as hitherto in any of Britain's dealings with the United States, where privileges have been granted, the United States have construed them into rights to be maintained, and I would

regret that any words in the licenses should be made the groundwork of an argument that the Americans had vested rights in the Crown timber of Ontario.

I am therefore prepared to stand in support of the Government legislating to the fullest extent on the lines of the resolution of the lumbermen's meeting, and would exceedingly regret that any lumberman should ask the Government to enact conditions that they would not firmly uphold.

I further believe that future transfers of the right to cut timber on the Crown lands should only be made to Canadian citizens or to those who agreed to manufacture in Canada.

Mr. James Loughrin, the member for Nipissing, who was present, expressed the belief that the imposition of restrictions such as had been suggested, would impose a hardship on limit owners, who would be compelled to erect mills near the source of timber supply, where there would be no market for the culls or coarse products.

Mr. Waldie replied that if the restriction were imposed he would continue to tow culls from French River to Victoria Harbor, but if the American lumberman were to be permitted to tow his logs across to Michigan and have the American as well as the Canadian market for his product he (Mr. Waldie) and his son would be in Michigan.

Mr. Rathbun said that a closer manipulation of this coarse timber should be encouraged in this country. If it were converted into a marketable form it would find a ready sale. Practically the only market now was the United States, but there was a growing demand in Great Britain. England would take all the coarse lumber that Canada could produce and more for use as box shooks.

The difficulty had been that we had not been close enough to the motherland. We were getting there, and we should now take advantage of the exceptionally favorable opportunities that presented themselves.

During the discussion the fact was brought out that logs taken from the Canadian forests are sawn into lumber in Michigan and shipped back to Canada, duty free, to compete with the native product, which has to pay $2 a thousand to get into the United States market. The importation of Michigan lumber into Ontario is not large, but it is an element in the market. It is received at Sarnia, Windsor, Chatham, London, Hamilton, and even at Toronto. The statement was made by Mr. Waldie that Michigan lumber had been used to construct sidewalks in Hamilton.

At the conclusion of the interview Mr. Hardy thanked the lumbermen for the information they had imparted and promised that the representations made would be considered. He added that it was the United States tariff which had placed Canadian lumber at a disadvantage and that it was so intended.

From the Mail-Empire, 11th December, 1897.

An important and influential deputation, representing the lumbermen of Western Ontario, waited upon Mr. Hardy and his colleagues yesterday morning, and renewed their application for the adoption of such regulations by the Government as would prevent the exportation of saw logs. The deputation included Ald. Scott, John Bertram, John Waldie, E. W. Rathbun, J. Laidlaw, Sarnia; James L Burton, Barrie; J. S. Playfair, W. J. Sheppard, and others.

The Premier, first of all, asked whether objection was taken to the presence of reporters, and receiving a reply in the negative, declared the interview open

to press representatives. Mr. Gibson followed this up by a jocular suggestion that the time should be noted.

Views of the Lumberman.

Ald. Scott then read the following statement which, he said, set forth the views of a number of the lumbermen:

The importance of the question to all lumbermen in Western Ontario is our justification for again waiting on you to present our views and ask for your favourable consideration to the resolution passed by a representative meeting of lumbermen, held at Toronto, October 6th, where it was declared to be in the public interest. "that when new licenses are issued after April 30th, 1898, a regulation be included in every license that all timber cut on the Crown lands of Ontario shall be sawn, made into square timber, or otherwise manufactured in Canada."

We deem the present an opportune time for now offering you some reasons why we ask your Government to take this course.

(1) The retaliatory clause of the Dingley bill passed by the United States has made it difficult for the Dominion Government, without grave hardship and dislocation of trade being threatened, to place an export duty on saw logs.

(2) Under present conditions of free logs for export and a duty of $2.00 per thousand feet, sawing on the Georgian Bay for the American market could not be continued: the business of sawing lumber would, of necessity, be transferred to Michigan.

(3) This would affect not only Canadian operators, but also Americans who have established their saw mills in Ontario, and who are certainly entitled to consideration.

(4) It would be a ruinous policy to provide the raw material free from our forests for competition against our own mills, who would be handicapped by the $2.00 duty.

(5) If the exportation of logs cut on the Crown lands was entirely stopped Canadian lumbermen would enter no complaint of the $2.00 duty, considering it entirely a matter under the jurisdiction of the United States.

(6) While fully recognizing the rights of proprietorship, both of Canadians and Americans, in all licenses issued by the Crown, we consider the retaliatory clause an interference with our rights, and as Americans have induced the situation it is for them to apply the remedy.

(7) What Canadian lumbermen want is simply equality and fair play in the work of utilizing the product of their own forests.

(8) If a duty of $2.00 is charged on lumber entering the United States then an equal export duty should be charged on logs.

(9) Until the privileges contemplated by clause 7 be enjoyed, the only remedy is to prohibit the export of logs cut on Crown lands, and place American stumpage owners on the same footing as Canadians.

(10) Whenever therefore an equalization of conditions is brought about the embargo placed on the export of logs could be taken off.

The statement was signed by Messrs. J. Scott, Huntsville Lumber Company; N. Turnbul, Secretary; E. W. Rathbun, William Irwin, John Bertram, Thomas M. Sheppard, Imperial Lumber Company, C. D. Warren, President; J. & T.

Conlon, James Playfair, W. J. Sheppard, Chew Brothers, Burton Brothers, and J. S, Playfair, on behalf of the deputation.

Still of the Same Opinion:

Ald. Scott added a few remarks to the effect that the lumbermen did not desire to withdraw, or modify, anything that was said by them at their previous interviews with the Government. They wished to be placed on a footing of equality in this matter with the Americans; in other words, they were still in favour of a free exchange of forest products. He had been prepared to assist the Government in applying the remedy not only with regard to future licenses, but to those which existed at present. However, there was not absolute unanimity among the lumbermen on that subject, so it had been left entirely out of the question. They desired now to ask that in the legislation which they understood was to be introduced into the Legislature there should be a provision by which the Government might promptly remove any embargo they might impose on the export of logs whenever the Americans, by their own act, placed the Canadian lumbermen on a footing of equality with themselves.

Mr. Gibson.—How will that secure the manufacture in this country?

Ald. Scott replied that he did not take the view, nor did any other Canadian lumberman, to his knowlege, that they were not willing to have a free exchange of forect products with the Americans, and that under no circumstances should the export duty on logs be permitted. The contention made all along was that owing to the retaliatory legislation adopted by the United States, Canadian lumbermen were placed at a great disadvantage, and could not carry on business at a profit.

Mr. Ross.—You are urging the manufacturing clause on account of the retaliatory clause in the Dingley bill?

Ald. Scott.—That's the point. We would not have raised this question at all had it not been for the action of the United States.

Mr. Gibson desired to know how they were going to compel the United States to act differently in this matter.

Ald. Scott's answer was to the effect they did not desire to adopt a policy of compulsion towards the United States. What they said was that as the Americans by their legislation had prevented the Canadian lumberman from doing business with them on a reasonable basis, the Americans should not enjoy the advantage of our raw material to the detriment of Canadian interests. The lumber industry was a very important one, and anything which rendered it unprofitable would inflict a blow at the commercial and manufacturing life of this country. The present situation was the fault of the Americans, not of the Canadians, and could not be worse than it was at present. (Hear, hear.)

Wants the U. S. Market.

Mr. John Bertram strongly favored the adoption of a policy that would allow the Americans who had purchased timber in this country to take it away and do what they pleased with it, provided the retaliatory clause were removed. If they could secure the free admission into the United States of Canadian lumber it would be of the greatest possible benefit to this country. Apart altogether from pine, it would lead to a great demand for the coarser varieties of timber, such as spruce, hemlock and cedar. These would be manufactured into poles, railway ties, etc., in this country, and would furnish considerable employment to our own people.

Mr. Rathbun's Views.

Mr. Rathbun referred to the statement read to the Government as one of a compromise character. Personally he held more advanced views than were contained in that document. It was not a question of how much standing timber we had, but of the quantity of white pine and spruce there was in the United States which could be put in a marketable form to compete with similar kinds of Canadian timber on the markets of the world. Accepting the statements of authorities in the United States and in the Old World, the supply from both sources was very limited. Therefore the important question for us to decide, bearing in mind our own resources and the resources of our competitors, the industries that the forest would sustain, and the demands of foreign markets for the products of these forests, was whether we were justified in taking the position that Ontario timber should be manufactured within our own borders. He approved of the principle of not restricting the sale of timber limits, and not excluding anyone who would bring capital into the country, but he believed that if the whole of the timber was required to be manufactured here, capitalists and enterprising men would be attracted to Canada from the United States to a greater extent than ever before. At present, notwithstanding threats of an export duty in Canada, or the retaliatory duty of the United States, many of the most enterprising men in both countries were establishing immense pulp mills in Canada. Why were they doing this? Because they knew the products of this raw material would be wanted the world over, and that if the United States continues the barrier they would do so at their own loss, and with the result of destroying their own ability to compete with Canadians in the markets of the world. The competion, if this Government would restrict the manufacture of the raw material, would be short lived. To-day, in the markets of Great Britain, there was a competition with respect to the manufactured products of pine. Let the Government announce the adoption of the policy urged, and the great works in Wisconsin, the products of which were being sold in Great Britain, would be transferred nearer to the source of the supply of raw material. Let the Government bear in mind, in considering the document presented to them, that the great proportion of the lumbermen of Ontario thoroughly and heartily believed in providing for the manufacture of this timber within our own borders, as the wise course to adopt.

Possible Retaliation.

Mr. Hardy.—The Michigan lumbermen are very powerful people in their own State.

Mr. Rathbun.—No doubt.

Mr. Hardy raised the point as to whether the Michigan Legislature, in the event of the Ontario Government adopting the course suggested here, might not resort to retaliatory measures, and throw obstacles in the way of Canadian trade. For example, might they not prohibit Canadian railway trains from running on railways in Michigan that were chartered by that State, or require the railways to unload before crossing the border into Michigan.

Mr. Rathbun replied that he disliked retaliation in any form. Furthermore, they could not drive their American neighbours, because they were too enterprising and intelligent. In dealing with this question they had to view it from a higher and broader ground than that of retaliation. The question for the people of Ontario to consider was were they prepared to undertake the industrial development which lay back of all their forest wealth, and to inspire capitalists

with confidence by requiring the logs of Ontario to be manufactured within their own borders. Unless they were prepared to grapple and deal with this question he should hesitate, as a great many others did, to apply the principles of retaliation.

Mr. Hardy then wanted to know if Mr. Rathbun had been able to form any opinion of the extent of the manufacture of lumber by the smaller mills in Ontario, as compared with that of the large mills?

Mr. Rathbun replied that he could only say that he thought the local mills were a factor in connection with industrial development of the country. Mr. Bertram had referred to the injury wrought by the exclusion of the coarser grades of timber from the United States market. Certainly the fact of being excluded from that market and not being allowed to enjoy their own was a serious handicap to the local mills, because many lines of timber which they handled were used as a substitute for pine. Still they were now all paying greater attention to the markets of the Old World, and the demand for articles manufactured from basswood, swamp elm, maple and birch was increasing in the Mother Land. What was needed was a stable, decided policy of protecting the manufacture of these commodities in this country. Then capital would be attracted here from the United States and Great Britain, and our own capitalists would be encouraged as well.

No Slump in Prices.

Mr. Hardy asked Mr. Rathbun whether he concurred in the statement that the adoption of such a clause as suggested would deter Americans from purchasing Ontario timber limits, and that consequently there would be a great slump in the price of limits variously estimated at 25, 33, and even as high as 50 per cent.

Mr. Rathbun.—I have formed a very decided opinion, whether right or wrong, and it is that the exclusion from the American mills of 500 millions of pine made from Canadian logs would so improve the condition of that market that there could be no slump in the price of Canadian limits, and it is only a question of a very few years—you can count them on the fingers of one hand, and exclude the thumb—before the Americans will be dependent upon Canada for what white pine they want. We know that in some cases a substitute for white pine can be got, but no substitute can be made for many of the articles which are largely in demand in Great Britain, and are coming into greater use. Therefore I have no hesitancy in expressing the opinion that there will be no slump in the value of Canadian limits by the shutting out of Canadian logs from American mills.

Mr. Rathbun went on to say that the effect of exclusion would be to induce the American millowners to come to Canada, as being the source of supply. They had done it in the past. He came to Canada himself, and so did his predecessors. As to the possibility for retaliation, he did not think they had any reason to fear interference with the bonding privileges enjoyed by Canadian railway companies.

Mr. Hardy enquired if it were not a fact that the Americans were beginning to make great inroads upon our pine timber, so enormously large were their mills.

Mr. Rathbun said that this was undoubtedly the case. There was no doubt, also, the Americans were striving, at the present time, to take out all the pine they could. He believed in placing very few restrictions on the quantity that should be cut, because that was a matter largely regulated by the law of supply and demand.

STATEMENT BY MR. WALDIE.

Mr. Waldie next read a statement prepared by himself, in the course of which he said that he personally desired carried out to the fullest extent modifications in the conditions upon which timber was cut on the Crown lands under license, so that hereafter all the logs would be manufactured in Canada. The reasons he gave for his position were as follows:

"1st. As I believe it is the only means by which we can retain any portion of the business of sawing lumber in the Georgian Bay, and prevent the depopulation of our towns in that district.

"2nd. It is the only available means that will tell as a factor if Michigan millmen desire to influence legislation at Washington. The lumbermen of Canada having already asked the Dominion Government to take power to put an export duty on logs, and that power not being exercised has prejudiced the position of Michigan men at Washington, who ask that the agreement covering the $1 duty on lumber and free logs between the two countries should be restored. And I firmly believe that an absolute restrictive condition should be inserted in all the licenses that will be issued on the 30th of April next, and to prevent, if possible, the impression that has by some means obtained a footing in the United States that Canada will do nothing to retain the manufacture of the log within the Dominion.

"3rd. If the Georgian Bay is to obtain a fair share of the export trade to England it must be by increasing the manufacture at certain points, so that a sufficient quantity can be supplied for the foreign trade in competition with such points as Albany, Tonawanda, and Saginaw. What the English buyer requires is to get a large quantity of a certain class of lumber at one point; and this condition not only applies to the lumber trade, but to all other manufacturing industries in Ontario, which are looking to an export market for their products.

"The foreign trade (and when speaking of the foreign trade I mean other than the United States) requires prompt deliveries of large quantities, and in view of the recent speech by President McKinley in the opening of Congress, it would appear that the Government at Washington desire that the present Dingley bill shall have what they consider a fair trial. We are therefore justified in believing that there will be no change in the lumber or any other of the schedules for at least a couple of years.

"To enable our mills on the Georgian Bay to conduct their business with a view of capturing the markets of the world, some additional outlays will be necessary, such as the erection of dry kilns, and, in some instances, putting in a more modern plant. Therefore it is desirable that the change of the conditions in the licenses should be a statutory condition.

"Further, I consider, in view of the continuance of the Dingley bill and possible irritation, that there should be no reference made in the licenses to be issued as to the employment of Americans in any position, as hitherto in any of Britain's dealings with the United States where privileges have been granted the United States have construed them into rights to be maintained, and I would regret that any words in the licenses should be made the groundwork of an argument that the Americans had vested rights in the Crown timber of Ontario.

"I am therefore prepared to stand in support of the Government legislating to the fullest extent on the lines of the resolution of the lumbermen's meeting,

and would exceedingly regret that any lumbermen should ask the Government to enact conditions they would not firmly uphold.

"I firmly believe that further transfers of the right to cut timber on the Crown lands should only be made to Canadian citizens, or to those who agreed to manufacture in Canada.

(Sgd.) "JOHN WALDIE"

Michigan's Powers.

Mr. Waldie became involved in an argument with the Premier and with Mr. Gibson regarding the right of Michigan to regulate traffic on railways in that State chartered by the Legislature there. Mr. Waldie held that the State Legislature could not interfere, but that the Federal authorities had the right to do so, while the members of the Government took an opposite view.

The question was settled by the intervention of Ald. Scott, who pointed out that the State authorities might have the power to regulate a purely local traffic, but that was a case in which Canadian railways would not be interested. The power to regulate interstate matters was vested in the Federal power.

Proceeding, Mr. Waldie dealt with the capital invested in Canadian limits. He cited a case where Americans bought a property for $400,000. Of that sum only $35,000 was American money, the rest being Canadian. He was satisfied that a great deal of the money invested was Canadian money loaned by Canadian banks.

Mr. Hardy.—Then, if this clause would hurt anybody very much it would hurt Canadians rather than Americans ?

Mr. Waldie replied in the affirmative. He added that he did not think the property would depreciate very much, and the adoption of a wise policy would give such a stimulus to trade that Ontario would make more progress than it had for years past. He corrected the impression that the Georgian Bay mills were not fully equal to those in Michigan. The difference was that the Michigan mills ran twenty four hours a day while the Georgian bay mills ran about ten. The output of the former was correspondingly larger.

During the subsequent discussion Mr. Rathbun interjected some observations with a view of emphasizing the growing importance of the market for coarse lumber in Great Britain.

Unfair Competition.

Mr. Ross inquired if it was a fact that coarse lumber manufactured in Michigan mills from Canadian logs was being shipped into Canada, and competed with Canadian lumber.

Mr. Waldie replied that it was a fact. This lumber was being brought to Sarnia, Windsor, Chatham, London, Hamilton and Toronto. The sidewalks of Hamilton were being constructed of lumber that came from Michigan, and the logs went to Michigan, and the coarse product came back: The same thing was to be seen in Toronto, as Ald. Scott could testify.

Ald. Scott.—Yes.

Mr. Waldie.—I should say twenty or thirty millions come in.

Mr. Ross.—That compete successfully with Canadian lumber made from Canadian logs in Canadian mills ?

Mr. Waldie.—It does.

Mr. Hardy said he had noticed that Manitoba took 14,000,000 feet of lumber. What was the duty, he enquired.

Mr. Bertram.—None.

Mr. Hardy.—Would it be practicable to put one on in Ontario and the eastern provinces, and not Manitoba?

Mr. Bertram.—No.

Mr. Hardy.—Why would it not be?

Mr. Bertram said if a duty were imposed it would have to apply to the whole of Canada.

Mr. Hardy thought the course he had suggested would be practicable.

Mr. Bertram said perhaps it would have been under the old Act.

Mr. Hardy (to Mr. Waldie).—You don't want protection?

Mr. Waldie.—No, I'm a free trader.

Mr. Rathbun held that lumber was such a necessary article that no duty should be imposed, but should be free to enter both countries.

Mr. Gibson.—If the Americans put it on why should we not do so?

Mr. Rathbun.—Quite so.

Mr. Hardy also raised the point of how the imposition of American duties was to be met.

Mr. Rathbun's reply was that if the Government adopted the principles of the lumbermen's application on the ground stated by him, the Canadians would be put in a position to hold their own against the world.

The Premier's Reply.

Mr. Hardy dismissed the deputation with the remark that he recognized that Canadian lumbermen had been placed at a great disadvantage through the duties imposed by the United States, and the Government would consider how far the scheme suggested could be carried out.

Mr. Marter, Mr. Haycock, Mr. Gibson, and other members of the Legislature were present during the interview.

Papers and letters which appeared in city papers to which attention of Government was drawn.

Ex-Banker.

To the Editor of the Globe:

It is quite evident that Ontario has in respect to her timber policy a question of the first magnitude on hand. There has suddenly been arrayed against our second greatest industry all the hostility that interested American monopolists and unreasoning tail-twisters can summon together. Without in the least deserving such treatment, we find a hostile tariff thrown in our faces, together with a most aggravating statutory intimation to the effect that, if we attempt to retaliate, the tariff shall be made wholly prohibitory.

Experienced lumbermen with whom I have been thrown in contact think that the $2 will practically put an end to the cutting by Americans for sawing in Ontario, inasmuch as only the first-class grades of lumber—say, one-quarter of the cut at most—will stand such an impost, leaving three-quarters for which there is no profitable market.

Further, they say that if Ontario were to pass a law or regulation requiring the manufacture within the Province of all the logs cut therein, it would at once reduce by from 25 to 50 per cent. the saleable value of limits, whether those in the possession of the Crown or of private owners, Americans or Canadians.

If this view is correct, and unless the $2 duty actually operates as protection and raises the price in the States, and provided the Americans themselves do not soon tire of their new tariff, it follows that the Ontario lumbermen will also suffer by the deprivation of their markets, and that there will be an end to the purchasing of timber limits either by Canadians or Americans. In short, that our standing timber will lose nearly all its value, a calamity the magnitude of which cannot be exaggerated, and against which we must endeavor to guard by every means in our power. That we shall eventually overcome the present danger, to my mind, goes without saying, for I have the strongest possible faith in the stability and saving common sense of my countrymen.

A Difficult Situation.

The situation is one of extreme difficulty. Having personal knowledge of the extent of it, I was grieved when I saw numbers of Canadian journalists and politicians hastening to treat this great question as one out of which their first duty was to create embarrassment for the Government, and, having done this, they would afterwards enquire whether they had or had not dealt our country the most dastardly blow that its worst enemy could devise. Fortunately for Ontario indeed at this moment that the affairs of State are in cool and practised hands. I do not know when I have experienced so much relief and satisfaction as when I learned that the Government would not act in this matter at the dictation of persons interested in the Government's discomfiture, but had promptly summoned the Legislature to discuss in all its phases a question grave indeed, but needing nothing but accurate knowledge and self-restraint to deprive it of all its formidableness. It is necessary for us to know not only the extent of the evil with which we are threatened, and how it affects not merely one lumberman or one section but the whole people and the whole Province. Having some special knowledge of the facts, I purpose to contribute it to the general good.

On the one side, namely, in favor of meeting injury with retaliation, and hang the consequences, I need say very little, for heated declamations on that side may be read in almost every issue of the leading Conservative journals and in many Conservative platform speeches. Of arguments in favor of these declamations I have thus far been able to discover only one that is real argment, namely, that it would be good for our people to have the sawing done here instead of having the logs exported.

The demand that the manufacturing shall be done on our side is entirely natural. I am wholly in sympathy with it, and I think that it should henceforth be the foundation stone of our timber policy. Wherever such manufacturing within our limits has been made a condition of the original sale it should be enforced, whether the present owner be an American or a Canadian, and all future sales should be made with that condition. Against such a condition our American neighbors have no title whatever to protest. If they built a quarrel

on such a condition it would be because they had first resolved on having the quarrel. I don't think there would be any difference of opinion among Canadians in taking up any quarrel fastened upon us on such insufficient grounds. The whole question resolves itself into an argument as to what shall be done with regard to logs cut on limits that have been purchased by American lumbermen for the express purpose that they might export logs from them, and as to which limits there was no express condition made that the logs should not be exported. Some of our own unthinking friends say at once, "yes; let us stop the export of all logs; the Government can make any regulation it chooses regarding the cutting of logs; the Americans are excluding our sawn stuff; let us stop the supplies for their mills."

Must Lead to Reprisals.

Now it needs no argument to prove that any such action on the part of our Government would lead to reprisals on the part of the United States. The intention of the Dingley bill was to protect United States lumbermen. With that object the duty was raised from nothing to $2, and a rider added to the effect that if any country imposed an export duty on logs the amount of such export duty should be added to the $2. But, it is urged, a condition requiring manufacture in Canada is not an export duty, and that, therefore, the clause in the Dingley Act would not apply. True; but supposing that at the next session of Congress the lumbermen went to Washington complaining that by a subterfuge and by what they could easily represent as a gross injustice the Government of Ontario had evaded the export duty clause and had practically confiscated the property of free and intelligent American citizens. We, who know how Americans can howl when they have nothing but imaginary grievances, can form some idea of the stupendous ululation that would be set up when they had succeeded in provoking us into endowing them with a real grievance; other nations could not. Lucky we should be if we escaped not merely the total exclusion of our lumber products, but a declaration of non-intercourse altogether. We may rest assured of one thing: the Dingley law means not only what it says, but also that if the anti-export duty clause is found insufficient it will hereafter be reinforced and made effective.

And I should like to know from our friends who are calling for prohibition of export by what legal process they would prevent American lumbermen from exporting logs from their limits? I am sure a mere statute or order in council would not dissuade them from taking out logs which they supposed belonged to them—they are of the wrong, that is to say our own, breed. The law would assuredly have to be backed by material force. We would have to send the sheriff with a *posse comitatus*, or the Crown lands agents, or to call out the militia. Yea, and we should have even to man, arm and license tug boats to apprehend any logs found in the act of being exported from this Province. In all probability somebody would be shot during the discussions that would follow as to the ownership of the logs. What would the United States Government have to say if any of its citizens were killed while attempting to move move their property out of this country? What kind of a bill for damages would they render for logs detained, business ruined, etc.? The consequential claims in the "Alabama" affair would be nothing to it. What would the British Government say if we, in the exercise of a right which was not strictly a moral right, but was exercessed because of anger or expediency only, plunged two great empires into a bitter quarrel? Lastly, what would the Dominion Government say if Ontario essayed to pass laws which threatened to cause ill-feeling between nations

which were contrary to the Dominion policy of peace and goodwill, and were therefore properly within the sphere of the Dominion Government's veto. The very least evil that could befall us would be that our legislation would be promptly disallowed and we left with nothing but a large stock of hurt feelings on hand as the result of our action. Plainly, then, our policy should be diplomacy first, force, only in the last resort.

The Possible Advantages.

And now let us look into the amount of the supposed possible gains in return for which some of our journalists appear to be willing to shoot at sight any American lumberman found in the act of exporting his logs from Canada.

It appears from reliable information which I have obtained that in 1894 there were 20,000 square miles of pine lumber under license in Ontario. Of this area only 1,700 square miles were owned by Americans who were not mill owners in Canada. Since that date several American limit-owners have built mills in Ontario, for instance, at Whitney, Parry Sound, Peters and on the Emory limits. So far as I can learn the proportionate area of limits owned by non-mill-owning Americans is rather less than more than it was in 1894. Of the limits owned by Americans in Ontario, not one in ten perhaps has been bought from the Government, but nearly all have been purchased in open market from private owners, in some cases at very high prices. In 1896 there were exported from Canada to the United States pine logs to the value of $1,574,000. In the same year there were imported into Canada from the United States pine logs to the value of $286,718, making the net export about $1,300,000.

The utmost claim that is made in favor of a retaliatory policy is that, provided the Americans did not exclude our lumber altogether, we might get the sawing of some 300,000,000 feet now sawn in Michigan, and that perhaps fifteen or twenty mills in the Georgian Bay would be the gainers or that American owners would erect mills in Ontario. If this gain were made (without any offsetting loss) we should have this position:—It is estimated that about three-fourths of the cost of sawn lumber is put into the article before it gets to the mill. That part of the work has to be done in Canada. The other fourth consists of the cost of sawing and piling—say for this last, $2 per thousand. Our mills and mill hands would therefore, it is claimed, have to divide among them $600,000 annually. But would they? And what for? The American millers could at best take only a quarter of the cut into the States against a $2 duty; *i. e.*, the first or best quality: the seconds and thirds, amounting to three-quarters of the cut, would be left on their hands without a market. They would simply cease to cut while the $2 duty was charged, unless, as before said, the duty raised the price in the United States. There is yet another point, namely, that the large mills of the Americans, cutting some twenty to thirty millions a year, against our Georgian Bay mills, which cut about half that, induce too great a cutting, which is a strong ground of complaint. So it will be seen that in return for an exceedingly problematical gain of at most $600,000, even supposing that the Americans did not execute reprisals, we should first lose all the money now spent in getting out 300,000,000 feet of lumber to the point of cutting, say, $2,000,000 at one swoop. We should incense, and, not to put too fine a point on it, we should rob, a by no means mute and powerless class of Americans: we would damage our reputation for fair dealing: we would have entered upon a policy from which, as I have said above, we should have to retreat immediately and hastily on account of the international complications it would cause: we should have postponed indefinitely the era of good feeling which, despite the outlook, I feel confident is

approaching; we should have seriously reduced the income of the Provincial Government, even to the extent of rendering necessary that infliction of direct taxation with which we have been threatened this twenty years past, and we should have given our business a shock that we should not recover from in a generation.

A Serious Loss.

A loss of 25 or 50 per cent. in the value of our standing timber would completely prostrate us. It does not mean a few thousands or hundreds of thousands to a few lumber limit owners. It means millions, many millions, and not only to limit owners, many of whom would of course be completely wiped out, but all of our banks and financial institutions would receive a death blow. There are no statistics available on the point, but the best information I can gain is that our financial institutions throughout Canada have $40,000,000 of their capital and deposits invested directly or indirectly in the lumber trade. That is the sum, or rather part of the sum, which some of our belligerent journalists and politicians would risk with such light hearts. The course they are commanding us to take has no other goal than the paralysis of the lumber trade, the throwing out of employment of all the thousands engaged in our lumber camps, the settlers and teamsters depending on them, the merchants who supply outfits and provisions, and the financiers who carry the lumbermen—with whose money? If we want to see stagnation and ruin, let us rush at this timber question and settle it right off without debate. If we want to convert a threatening temporary danger into a permanent benefit, let us have full discussion and then firm action.

For, bad as the immediate prospect is, the difficulty is manifestly destined to be temporary only, for it is quite obvious that if the American attitude towards our lumber industry were to be maintained even for so short a period as five or ten years the result of it would be that their own timber would be rapidly approaching exhaustion, while ours would against our will have been conserved, and in the end we and not the Americans would have the dictation of the terms upon which our timber shall be dealt with. And let us take notice that Great Britain and Germany, who are hit ten times as hard as we are by the Dingley bill, do not talk retaliation. Great Britain simply says, let the Americans stew in their own tariff; and even Germany offers to do nothing but remonstrate.

But, however temporary the difficulty, the situation is one of great unpleasantness, and it behooves all good Canadians in such a crisis to keep their tempers, and above everything to see that nothing is done in unthinking and ignorant haste to increase the evil. I think there has seldom been thrown into our political arena a question so fraught with evil possibilities. But if it teaches us never again to have so many eggs in one basket, to limber up our stiff necks and try to capture the world's markets, the Dingley bill may yet prove to be as great a blessing to us as it promises to prove a curse to its authors.

November 2. Ex-Banker.

To the Editor of The Globe:

No more unpopular task can at the present moment be undertaken than to attempt to run counter to the drift of public sentiment in western Ontario as regards questions arising between the United States and Canada in connection with the lumber interests. The country at large is pervaded by a feeling which demands retaliatory action of some kind in response to the provisions of the Dingley bill, and unfortunately this demand is voiced with the greatest emphasis by

that class of our population who do not fully comprehend the consequences certain to follow the line of action demanded by them. If we were in a position to coerce the United States it would be a pleasant pastime to exercise that power, and the lesson thus administered would please ourselves at least. If the consequences of the line of policy which is required by popular demand were likely to be such as to meet popular expectation our proper course of procedure would scarcely require argument; but while no particular harm can be done by denunciations ad libitum, which may possibly be a very good safety valve for giving vent to our feelings, yet when we seek to view the propriety of suggested lines of action from a practical standpoint it is advisable to be governed by facts and the actual condition of matters rather than by sentimental considerations. The purpose of this communication is to place certain indisputable facts before the public, leaving such as choose to give them consideration to arrive at their own conclusions.

An Export Duty.

The power is vested at the present moment in the Dominion Executive to impose an export duty upon sawlogs not exceeding $3 per M. feet, and an export duty upon pulpwood. When considering whether it is best to advise the exercise of this power it is proper to give due consideration to the cognate fact that the Dingley bill provides that the Canadian export duty shall be added to the American import duty on lumber, and that the duties upon wood pulp shall be increased to an amount corresponding with the export duty imposed upon pulpwood. With these facts under consideration the party possessed of intelligence and ability to reason coolly as to cause and consequence may be safely trusted as to the conclusion that will be arrived at, especially if he is in a position to be called upon to stand the consequences of his decision as a practical and operating lumberman.

It is possibly true that the Provincial Government of Ontario could, after the 30th of April next, impose discriminating duties upon sawlogs exported from the country, but there can be little doubt that such an expedient would be decided by the Treasury Department at Washington to be pro tanto the imposition of an export duty, and the consequences likely to follow would be not less serious than if the export duties were resorted to direct. If it be admitted that the Provincial Government has power to prohibit the export of sawlogs by requiring their manufacture in Canada, the consequences of the exercise of this power would in all human probability be much more serious than in the case of the imposition of an export duty, or discriminating dues.

We need not for a moment, however, anticipate that the Ontario Government will be permitted to prohibit the export of logs, for in attempting to take such a step it would be usurping the powers pertaining to the Dominion Government which has exclusive jurisdiction in all matters pertaining to trade and commerce. The export of sawlogs is a matter pertaining to trade, and it can be easily understood that if the Ontario Government were permitted to exercise this power the retaliatory action that Congress might see fit to take would in all probability involve in its consequences every Province in the Dominion, as it is not at all likely that discrimination would be made between the individual Provinces and the entire Federal union.

From the American Standpoint.

It would tend to increase our knowledge of matters bearing upon this question were we to look at the case from the American standpoint, as it would not be amiss to comprehend the reasons that have weight in the United States in prompting the action that has been adopted. The American has a prejudice against the imposition of the device for doing injustice to one class of the public for the benefit of another class designated "an export duty," and bad as the Dingley bill is, it contains no provisions more objectionable and oppressive than are the proposals to adopt a timber policy conceived solely in the interest of the saw-mill and pulp-mill owner, the practical effect of which will be to seriously diminish the value of standing pine, and to take the bread out of the mouths of the poor settlers who have a few cords of pulpwood to sell. The exact antithesis of this proposed policy is the provision of the United States constitution which prohibits an export duty. This prohibition resulted from the teachings of sad experience in colonial days, and that constitution contains no wiser provision.

Our Importations of Logs.

When the American legislator came to look the field over, he unquestionably ascertained that from 1867, the date of Confederation, to 1890, the importation of sawlogs from the northern part of Maine, drained by the waters of St. John River, to New Brunswick, had aggregated in round numbers 2,500,000,000 feet, and that during all this period while Canada imposed an export duty that country had not exported to the United States sawlogs to one-seventh of the amount of the quantity sent from Maine to New Brunswick. When in possession of this fact the American legislator no doubt became impressed with the idea that the Canadian export duty was somewhat invidious and uncalled for. During all this period the logs thus exported from Maine to New Brunswick and converted into lumber in Canadian mills was permitted entry into the market of the United States free of duty in order to still further foster this business, the nature of which was most advantageous to Canada. It might afford an interesting field for investigation to inquire to what extent lumber cut from such logs was exported to Europe, and less desirable qualities cut from Canadian logs sufficient to make up the amount were sent to the United States. Since 1890, when the export duty under the McKinley proviso was removed, our export of logs to the United States for the entire period has been in round numbers but thirty-seven per cent. less than our importation of sawlogs from that country.

Last year we imported into New Brunswick from the State of Maine 67,500,000 feet of logs, and from the Rainy River District side of the State of Minnesota for use of our mills at Rat Portage, it is reported we imported in round numbers from 50,000,000 to 60,000,000 feet. These facts have impressed the American mind with the idea that export duties, while undesirable in the abstract, have been unfair and oppressive in the concrete, and have roused that feeling of hostility the practical outcome of which we find embodied in the Dingley bill, and which previously found expression in the McKinley and Wilson bills. It is well for us to consider these facts, and decide whether, if we were placed in the position of the Americans, they would have influence upon the line of action we would adopt.

Much is said about conserving our forest wealth, and certainly no one will dispute the necessity for husbanding the reserve of timber that we possess, but the proper way to control and hold back this reserve is to abstain from selling it.

Let the Government be exceedingly careful about placing timber berths upon the market. If, however, berths are sold, it is not unworthy the consideration of the citizen whether there would not be a slight appearance of oppression in selling a tract of timber and then adopting a policy not named as a condition of sale that would prevent its being used by the purchaser.

Is White Pine King?

The argument is advanced that the country that controls the remaining reserve of white pine will be master of the timber situation, and will wield an enormous power. Expectations far beyond the possibility of realization may easily be built upon this theory. The difficulty for many years past that has confronted the Canadian lumberman as well as the holder of white pine in the northern States has been to maintain the position heretofore held by white pine against southern competition. Yellow poplar and cypress exist in enormous quantities in the southern States. The lumber from these woods is of excellent quality, and has largely supplanted the better grades of white pine for finishing purposes. This class of lumber is freely sold, not only in all the seaboard cities, but in Chicago, Toledo, Cleveland, Buffalo and all lumber centres in the northern border States, and the influence of this opposition has been so great as to depress seriously the prices of the better grades of white pine. This competition will not only continue, but will grow sharper and more difficult to withstand.

The south possesses an unlimited amount of yellow pine, and this lumber is constantly encroaching upon markets hitherto held by white pine. Southern yellow pine flooring and wainscotting and other grades are freely sold in all northern cities, and at prices that have steadily depressed the price of white pine strips and other lumber coming into competition with it. The uses to which this lumber is adapted are constantly increasing, and its substitution for white pine goes on apace. Just at the present time a scheme for establishing a great mill and distributing yard at Tonawanda, N.Y., for handling yellow pine lumber brought from the south by vessel and Erie Canal boats is being discussed. Under these changing conditions of the American lumber trade, the idea that a reserve of white pine can confer any monopoly in lumber supply is not a well founded one. The most earnest advocates of the $2 duty were southern lumbermen. Their object in securing this duty was to enlarge the field that they could take possession of for placing yellow pine, poplar, and cypress in the place of white pine for the purposes the latter had hitherto been used.

Starving out the Americans.

In place of starving out the Americans by withholding our supply of white pine for four or five years, as some optimistic individuals propose to do, we would simply find that, should that expedient be attempted, other woods would be substituted for our white pine, and the result would be a loss of market for Canadian white pine lumber in the United States—especially of the coarser grades. It is essential to the prosperity of our lumber trade that we should have the United States market for our coarse grades of white pine. On an average tract of white pine timber not more than twenty-five to forty per cent. of the product is suitable for deals, waney timber, and square timber for the English market. The remaining sixty per cent. or more must find its way into the United States, and this is especially true with regard to that section of Ontario in which the agitation for retaliatory measures is most pronounced.

Our dependence upon the American market may be best realized by consulting the trade and navigation returns. For the year 1896 it will be found that the sale of forest products purchased from us by various countries was as follows:

United States	$13,528,000
British Empire	12,530,000
All other countries	1,117,000

It may fairly be presumed that the various countries now taking but a little over a million of our forest products would be some time in getting into a position where they could absorb the exports of over $13,500,000 made to the United States.

The southern lumbermen are quite prepared to take advantage of any indiscretion we may commit. They would welcome with enthusiasm the imposition of an export duty, for it would mean the doubling of the protection they now enjoy. They would demand of the Treasury Department that discriminatory duties should be classed as export duties, and they would especially hail with delight a provision prohibiting the export of logs, as that would enable them to ring the changes upon confiscation of American property, oppression of American timber limit holders, unfriendly action towards the United States, etc., demanding in return drastic action, by the prohibition of the importation of lumber from such countries, as an example for all future years. The stake they would then play for would be the entire removal of Canadian competition, either in lumber manufactured in Canada or in the United States from Canadian logs.

As to the advantage resulting from the sawing of logs in Canada a great deal of nonsense is talked by individuals not conversant with the trade. It is of course desirable to secure the sawing of logs in Canada if possible. The actual labor outlay in converting logs into lumber is less than $1 per M feet, and if in exporting logs in place of converting them into lumber an advantage of $2 or $3 per M feet is gained to the Canadian timber holder it is difficult to understand how it can be made to appear that the country is the loser by the operation. Many Canadian sawmill owners have been exporting their logs to the United States. These men pursue this course simply because it pays best, and few of them refuse to take this course when circumstances render it impracticable to convert the logs into lumber at better profit.

Effect of Attempted Coercion.

The lumbermen who advocate so strenuously the resort to retaliatory measures no doubt honestly believe that the United States can be coerced into granting our demands, which we believe are based upon principles of equality and justice, and which, it goes without saying, if these principles governed the action of the American legislator, would be accepted. It, however, is, most unfortunately, but beyond all question, a fact that successful coercion is a flat impossibility. We may as well confront that fact even while lamenting as deeply as we may wish its existence. We furnish to the United States less than 3 per cent. of the timber consumed in that country. This small proportion of supply does not wield an influence of sufficient potency to produce any appreciable effect, and with retaliatory measures adopted by ourselves and the natural result of incensed feeling in the United States resulting in counter retaliation, any slight inconvenience that might be felt in consequence of impeded Canadian lumber importations would not be allowed to weigh for a single moment.

In place af yielding to passionate counsel and inaugurating a war of tariff provisions sure to be met by counter provisions and leading to serious and lamentable difficulties, it would surely be better to try, for the first at least, friendly representations. The pressure of necessity under which the men who were in favor of free lumber or of the moderate rate of duty of $1 per M were compelled to vote for the tariff bill as a whole no longer exists. These questions can now be considered upon their merits, and will probably be so considered if presented in a conciliatory and diplomatic spirit. Let us be done with the tide of frenzy and the crude schemes of visionaries and listem calmly to the dictates of reason and common sense.

The efforts put forth by the majority of the western Ontario lumbermen in connection with this matter have simply been efforts to secure their own ruin. No greater disaster could befall them than to have their advice followed and the policy they demand adopted.

The Pulpwood Question.

With regard to the pulpwood branch of the subject less justification perhaps exists for a demand to adopt retaliatory measures than in the case of sawlogs. Our supply of pulpwood furnished the United States last year was 103,000 cords, valued at $600,000, or about 12½ per cent. of the consumption of pulpwood in that country. Nearly all the American pulp mills control vast timber reserves of their own sufficient for generations to come. Their mode of cutting is to leave the small timber, and their tracts are fit to cut over once in fifteen or twenty years. The total exclusion of our pulpwood from the United States would produce little effect for at least some years to come. The requirements of the trade now demand the combination of the pulp mill and the paper mill as one concern. Wood pulp deteriorates in quality if shipped long distances, and the best results are obtained where the pulp is immediately treated and converted into paper. It is the statement of pulp mill and paper mill men that even if the export of Canadian pulpwood to the United States was prohibited the increase of demand for Canadian wood pulp would be insignificant.

Lynedoch, Oct. 25. John Charlton

To the Editor of The Globe :

I take the liberty of addressing you on the lumber and sawlog question, and in doing so wish to refer to the few statements and arguments presented by those opposed to the request of the Ontario lumbermen as presented to the Ontario Government by the committee—Messrs. Bertram, Rathbun, Scott and self—appointed by the meetings held in the Board of Trade rooms, Toronto.

It is not our desire to lessen the revenue of the Province in the appeal that regulations shall be added to the new issue of licenses, to the effect that the log shall be manufactured in Canada, and we deprecate all propositions that the saw mills located on the Georgian Bay receive any favor in the shape of refund of dues. This is not our desire, for we recognize the fact that timber, being the property of the people of Ontario, should continue as heretofore to contribute a substantial annual income to the Province, so do not wish that the cutting of pine should stop.

Neither do we believe that any serious impairment of revenue will result from the change we ask, as there are not more than ten or twelve American lumbermen (all told) who are interested in limits tributary to the Georgian Bay

—the only place whence logs can be towed to Michigan mills—and of these more than half would prefer to saw their logs in Canada, owing to being interested in sawmills located near their timber. The following mills in Canada are controlled by Americans, viz.:—

Spanish River Lumber Co., at Spanish River.

Cutler & Savage Lumber Co., at Cutler.

Moiles Bros. Lumber Co., at John's Island.

Holland & Emery Lumber Co., at Byng Inlet.

Wm. Peters Lumber Co., at Parry Sound.

Arthur Hill Lumber Co., at Midland.

The interests of the above-named Americans, who have their sawmill plants in Canada and their investments here, should not be sacrificed any more than those of Canadians. We only ask for them and ourselves in this respect fair and equal terms. We do not desire, nor do we believe it practicable, to have any refund of dues as a condition of manufacturing here. We ask what we believe will be of some practical value, not only to lumbermen on the Georgian Bay, but to the whole people of the Province of Ontario, and we quite agree with that part of *The Globe* editorial which states that there should be a permanent policy of preservation of our forest wealth, and that without any regard to American legislation. What our neighbors may wish, or the fear of any action they might take, should not deter our Government from doing what they believe will be for the best interests of the people they represent.

Logs from Maine.

I do not consider that the 67,500,000 feet of logs from the State of Maine which were floated into Canadian territory to be manufactured there in mills owned and controlled by Americans, employing only American labor, can be properly classed as sawlogs imported into Canada. They no doubt appear in the Government returns, but in no way can a Canadian own, profit by or work on these logs. The United States Government still regards them as American property (although passing, perforce, through a foreign country), and as such the lumber manufactured from them is entitled to free entry into the United States. Furthermore, if these logs could be floated on the ocean not one of them would be permitted to go through a mill in Canada. Therefore it is entirely misleading to claim that these are an offset to logs taken to Michigan mills, where a Canadian cannot be engaged in their manufacture.

The argument that Canada supplies only 3 per cent. of the total lumber consumed in the United States, and thereby only influences the market to that extent, is another instance in which figures can be used to mislead. There never was any Canadian wood product, beyond sample lots, sent south of the old Mason and Dixon line, nor west of the Mississippi river. Therefore, Canadian lumber has no influence in three-fourths of the States of the Union; but, taking New York and the eastern States into consideration, Canada has supplied, and will continue to supply, fully 50 per cent. of the white pine used. We do not wish the supply for the district tributary to Canada to reach the consumer only through a Michigan mill. Give the Canadian mill a chance on equal terms.

The "per cent." argument might be equally well applied to our fish and game. Are we willing that Americans, with a large draw-net and two immense tugs,

should sweep all the fish of the Georgian Bay into American waters because there would not be in the draw 3 per cent. of what the Americans used? This is exactly what we are asked to allow to be done with our pine in that district.

Is White Pine King?

It is asked, Is white pine king among woods? We say "yes." Let the following extract from an English paper be evidence:—"There is another line of wood goods which we may say is again taking its place even to a more marked degree than the article first dilated on, and that is first quality Canadian pine in regular sizes. For a long time past there have been many who would argue that first quality Canadian pine had seen its day, and that American white wood was fast superseding it. Such, however, is not the case, for one has only to look around him, and what does he find? Why, American or States white wood is nowhere. At the present time white wood is not wanted for freight and charges even. This is, perhaps, a deplorable state of affairs for any branch of a trade to be in, but it is nevertheless a fact. It cannot and will not replace first Canadian pine."

There is no fear of southern or Pacific coast pine interfering with our market, either foreign or local. The foreign market asks and will pay the highest price for our best grades. The local market is preserved by cost of transportation from interference from the southern States or the Pacific coast. As instance, lumber sold by a mill at Vancouver delivered in Ontario at $30 per M feet, cost $24 per M feet for transportation, leaving $6 as the price at the mill. If not less than cost, there certainly was no profit to the mill in British Columbia. The same with southern pine—it is not gaining in popular favor—although the railways leading from the south to the north (being interested in the timber) have freighted 1,000 miles for the same rate that the northern ends of the lines charge for 500 miles on lumber from Canadian mills.

I am perhaps not an "old" lumberman, but I claim to be "up-to-date," and, having invested the savings of 50 years in timber limits tributary to the Georgian Bay, have no fear of reprisal, either as presented by an ex-banker or as threatened by Canadian champions of Michigan interests.

We believe that the time has arrived for the change. To delay, awaiting the action of the American Government, does not commend itself to those who understand the position. To delay beyond the present year and then to act would be like locking the door after the horse was stolen.

The Northwest Pine Supply.

We quote the following extract taken from Bradstreet's circular of November 4 as to the pine supply of the Northwest:—"The *Northwestern Lumberman* says: 'A pioneer lumberman at Duluth, Minn., is reported to have lately said that it was a crime to ship a foot of lumber from that district to the eastern markets, as every stick of it would be needed on the western prairies within a few years. He said that in ten years the pine in Minnesota and Wisconsin would either have been cut or taken out of the market. What is left is rapidly going into the hands of a few owners, and the big operators should be in no hurry to cut it. The mills of Duluth-Superior will at the end of this year have manufactured the logs stripped from an area of 100,000 acres. This shows at what a rapid rate the northwestern pine lands are being denuded. It is this man's idea that the pine is so rapidly disappearing that the Government should take the matter in hand and

reserve every acre of timber land in Minnesota north of range 60. Of course he means all the timber land remaining in the hands of the Government. But there seems little prospect of the Government doing any such thing. It even allows the reservation pine to be sold off. There is no reason to think that there will be any halt to the present rate of cutting pine until the whole shall have been exhausted.'"

Do lumbermen understand their own interests? My reply is:—Having carefully considered the conditions in the Dingley bill, I am prepared to accept the consequences—believing that the present is a favourable time to take the stand that the work of manufacturing our own raw products should be done by our own people, and I am not moved by passionate feelings, nor by political prejudices.

I am not in favor of coercion: neither do I wish to be coerced by a foreign power to conduct my business with a 75 per cent. condition against me.

Now, let us consider who brought about the present conditions, which I hope and believe will ultimately help Canada, and disappoint the movers. Walter S. Eddy of Saginaw is the man who engineered the lobby at Washington for the Michigan $2 interest, with the clause that an export duty (if charged) shall be added to the $2 import duty. Thus, if matters were evened and placed where they were when Mr. Eddy's firm bought a Canadian limit, namely, a $2 import on lumber by the United States, and a $2 export by Canada—the American $2 import becomes $4.

Mr. Eddy as a Witness.

Now, this Mr. Eddy was a witness in connection with the case of Paget *v.* Sadler, *et al*, February 16th, 1892, and a portion of his sworn testimony is as follows:—

Q. - Was there an export duty on Canadian logs at that time? A.—$2 per thousand, I believe.

Q.—Do you know whether or not that has since been removed? A.—Yes, it has.

Q.—How does that affect the value of your logs, or limits? A.—Increases them very much, just so much.

Q.—For what purpose did you buy these limits, to speculate or for your own use as lumbermen? A.—We bought them for a double object in view, for speculation, and with a view of bringing them to our mill here.

Re-cross-examination by Mr. Hughson—Q.—You don't mean to say, Mr. Eddy, that the removal of $2 per thousand feet export duty would increase the value $2? A.—If we brought them to our mill here.

Q.—So that you don't mean exactly what you said? A.—My answer was to increase them so much. It would increase them $2.

Q.—The duty would only make this difference, it would make a difference in the value of them if you manufactured them in the States? A.—It did advance timber over there $1 per thousand, at the least calculation.

Q.—The cost of manufacturing them in the Province of Ontario—would that be any more than the cost of manufacturing them here? A.—The actual cost of manufacturing there would be no more, only it would be to us on account of our mills being here, and unless the cost of manufacturing is figured.

Q. The import duty on manufactured material was $1? A. Yes, sir.

Q. So that at that time there was only the addition of $1 per thousand? A. Yes, sir.

Re-direct examination, by Mr. Stewart.—Q. What is the import duty on lumber manufactured into this country? A. The duty is removed. If they levy any export duty it goes back to $3.

Equal Advantages.

Thus you see that the very man who led the Michigan lobby was increasing the value of his limits by depreciating the value of those held by Canadians. Of course he should be treated fairly, but our Government should not let his evident unfairness go unchallenged.

Should the Government decide to grant the lumbermen's request, would that forfeit the holdings of the American? I say "No" Let the American pay the same dues, have the same advantages as the Canadian, and let him manufacture in Canada.

Let us be fair. An American can saw his logs in Canada on the same terms as the Canadians, and let us have legislation for Ontario interests only and stop such paragraphs as the following being justified by the facts: "The mills at Bay City, Mich., are reported to be actively in operation, several having commenced sawing on Canadian stock. The yard trade there is reported good and difficulty is experienced in securing cars for shipment. Canadian timber owners are now sorry that they let the season go by without rafting in more logs to this side. The demand, especially for good Norway logs, is not only brisk but the price is entirely satisfactory to the seller. Nobody is looking for an export duty on logs, so that the receiving centres for them, like Bay City, are looking for brisk business as soon as spring opens."

Let us also stop the exodus of all the active lumbermen from the Georgian Bay to Michigan and from Toronto to Buffalo.

The Ottawa Valley Lumbermen.

In conclusion, let me call your attention to interests arrayed against us. The Ottawa Valley lumbermen are not affected, their supply of logs, whether from Ontario or Quebec, being largely (I might say entirely) confined for transport to the Ottawa river and its tributaries. No log can be taken from them to the United States unless at a commercial loss. It is generally believed that the proportion of high grade lumber is annually decreasing on the Ottawa, and in view of their having to dispose of a portion of their immense cut in a local market they become interested in lessening the cut of the Georgian Bay mills, which is largely sold in the local market. Therefore we find them among the most active opponents and also the greatest transgressors, as the largest operator in the Ottawa Valley is this winter also, through his partners, the largest operator on the Georgian Bay, cutting from 30,000,000 to 50,000,000 feet to supply the Michigan mills with logs and Michigan men with labor, and if their operations go on increasing they will aid Michigan men in the speedy removal of all competitive lumber manufactures in Ontario west of Peterboro' and Port Hope.

Therefore, consider that the opposition coming from Ottawa would have their properties increased in value by decreasing the cut of Georgian Bay mills, and as you desire to hear all sides of the question I ask again, as I did in my former memorandum presented to the Ontario Government, has Ontario pine logs to spare for Michigan mills?

John Waldie.

Toronto Nov. 10.

NEW TIMBER REGULATIONS.

Department of Crown Lands,

Toronto, 16th September, 1897.

Notice is hereby given that by authority of an order of His Honour the Lieutenant-Governor in Council, dated the 15th day of September, 1897, the Crown Timber Regulations have been amended by adding thereto the following Orders and Regulations.

Firstly.—No timber licensee or holder of a permit engaged in cutting, taking or removing sawlogs or timber upon or from the lands of the Crown, or driving, floating or towing the same in Canadian waters, and no other person, firm or company engaged in or about any such work under the authority or with the assent of such licensee or holder of a permit, shall employ or engage, or permit to be employed or engaged in any capacity whatever in and about or in connection with such cutting, removing, driving, floating or towing in Canadian waters, any person who is not a resident of and domiciled in Canada, excepting the following persons, viz: the agent or manager having charge or supervision of the entire lumbering operation carried on by any person, firm or company within the Province of Ontario, the head book-keeper or accountant under such agent or manager, and one estimator or explorer, unless under special permission of the Commissioner of Crown Lands expressed in writing.

Secondly.—Should any such holder of a timber license or permit who is cutting, taking or removing logs or timber upon or from the lands of the Crown, or towing as aforesaid, or any person by his or their authority or assent, employ or permit to be employed in his lumbering or towing operations aforesaid, either by himself or his agent or contractor any person who is not a resident of the Dominion of Canada and domiciled therein other than is above excepted, then his license or permit as the case may be, shall be suspended and held in abeyance, and shall not again issue until so directed by Order-in-Council, and then only upon such terms and conditions as the Lieutenant-Governor in Council may impose, and all timber and saw logs cut on territory included in the license or permit shall be deemed to have been cut in trespass and shall be subject to seizure and the penalties provided and applicable to timber cut in trespass by any Act of the Legislature or by any regulation.

Thirdly.—Where the tug used in towing any logs or timber is registered in or as of the United States, nothing herein shall prevent the employment by the person using such tug of the captain, engineer or fireman thereof.

Fourthly.—All horses, cattle, sleighs and all provisions, pork, flour, tea, and all tools and hardware, such as chains, axes, saws and all other tools, supplies or material of any kind whatsoever required or used in connection with the taking out of sawlogs, or timber cut upon Crown lands shall be purchased in Canada.

Fifthly.—Should any holder of a timber license or permit, purchase, either by himself or his agent or contractor, supplied as aforesaid to be used in connection with the cutting of timber upon licensed lands in the Province of Ontario outside of the Dominion of Canada, except under permission of the Commissioner of Crown Lands expressed in writing then his license or permit as the case may be, shall be suspended or placed in abeyance as aforesaid: and all timber and saw-logs cut on territory included in them shall be deemed to

have been cut in trespass, and shall be subject to the same penalties as are provided in paragraph 2 of these Regulations in the case of logs or timber cut in trespass. The Committee further advise that these Regulations shall extend to and include pine timber upon lands which have been or may be sold by the Crown, but upon which the pine trees or timber are reserved to the Crown or are the property of the Crown.

J. M. GIBSON,
Commissioner of Crown Lands.

COPY OF AN ORDER IN-COUNCIL APPROVED BY HIS HONOR THE LIEUTENANT-GOVERNOR, THE 17TH DAY OF DECEMBER, A.D., 1897.

Upon consideration of the report of the Honorable the Attorney-General, dated 17th December, 1897, the Committee of Council advise that the following Crown Timber Regulations be approved of by Your Honor:—

1. Every license or permit to cut pine timber on the ungranted lands of the Crown, or to cut pine timber reserved to the Crown on lands located, sold, granted, patented or leased by the Crown, which shall be issued on or after the 30th day of April, 1897, shall contain and be subject to the condition that all pine which may be cut into logs or otherwise under the authority or permission of such license or permit shall, except as hereinafter provided, be manufactured into sawn lumber in Canada, that is to say, into boards, deals, joists, lath, shingles or other sawn lumber, or into waney boards or square or other timber in Canada: and such condition shall be kept and observed by the holder or holders of any such license or permit, who shall cut or cause to be cut pine trees or timber under the authority thereof, and by any other person or persons who shall cut or cause to be cut any of such pine trees or timber under the authority thereof, and all pine so cut into logs or otherwise, shall be manufactured in Canada as aforesaid.

2. Should any holder of a timber license or permit, or any servant or agent of such holder, or any person acting for him, or under his authority or permission, violate or refuse to keep and observe the condition mentioned in the preceding regulation, then and in such case the license or permit to cut pine timber on the berth, territory, lot or lots included in the license or permit, and on which or on any part of which the pine was cut, and in respect of which or any part of which there was a breach of such regulation or a refusal to observe or keep the same, shall be suspended and held in abeyance, and shall not be re-issued, nor shall a new license issue unless and until so directed by the Lieutenant-Governor in Council, and then only upon such terms and conditions as the Lieutenant-Governor in Council may impose.

3. The Commissioner of Crown lands, his officers, servants and agents may do all things necessary to prevent a breach of the aforesaid condition or regulation, and to secure compliance therewith, and may, for such purpose take, seize, hold and detain all logs so cut as aforesaid, and which it is made to appear to the Commissioner of Crown Lands it is not the intention of the licensee, owner or holder, or person in possession of, to manufacture or cause to be manufactured as aforesaid in Canada, or to dispose of to others who will have the same so manufactured in Canada, until security shall be given to Her Majesty satisfactory to the Commissioner that the said condition will be kept and observed, and that such logs will be manufactured in Canada as aforesaid: and in the event of re-

fusal on the part of the licensee, owner or holder, or person in possession of such logs, to give such security within four weeks after notice of such seizure and demand of security by or on behalf of the Commissioner, then the Commissioner may sell or cause to be sold such logs by public auction after due advertisement to some person or persons who will give such security to Her Majesty as the Commissioner may require that such logs shall be manufactured in Canada. The proceeds of such logs shall, after such sale and after deducting all expenses of such seizure and sale, and any sum due and owing to her Majesty for or in respect of any timber dues, trespass dues, ground rent, or on account of the purchase of any timber or timber berths by the owner, licensee or holder of a permit, or other person who has cut or caused to be cut such logs, or who is the owner or holder of the same, be paid over to the person entitled to the same.

4. Provided, nevertheless, that nothing in the preceding regulations which requires pine logs or timber to be manufactured in Canada as aforesaid, shall apply to logs or timber cut and in use in Canada for any purpose for which logs or timber in the unmanufactured state, are or may be used.

5. Provided further that these regulations shall not apply to the east half of the township of Aweres, in the District of Algoma, containing eighteen and one-half square miles, nor to twenty-two square miles in the District of Thunder Bay, composed of berths two, three and four of the timber sale of 1890.

6. The foregoing regulations shall not come into force unless and until they shall be approved by an Act of the Legislature.

Certified,

S. LONSDALE CAPREOL,

Assistant Clerk, Executive Council.

(No. 59).

Return to an Order of the House of the twenty-second day of December last for a Return of copies of all papers, documents and correspondence between the Government, or any Department thereof, and any other person, persons or corporations in any way relating to the dealings of the Moore Lumber Company with the Crown Lands Department or with the Government; together with a full return of copies of the evidence taken at the investigation of the said Company's dealings with the Government, or any Department thereof, and of all other documents and correspondence in connection therewith, as well as a copy of the report and finding of the Commissioners appointed to investigate the same. Presented to the Legislature 12th January, 1898. Mr. *St. John.* *Not printed.*

SPECIAL REPORT

ON THE

IMMIGRATION OF BRITISH CHILDREN

PREPARED BY

THE SUPERINTENDENT OF NEGLECTED AND DEPENDENT CHILDREN OF ONTARIO.

PRINTED BY ORDER OF

THE LEGISLATIVE ASSEMBLY OF ONTARIO.

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6 N.C.

PARLIAMENT BUILDINGS,
TORONTO, Dec. 15, 1897.

TO THE HONORABLE E. J. DAVIS,
Provincial Secretary of Ontario :

SIR,—Under the provisions of the Act passed at the last session of the Ontario Legislature, entitled "An Act to regulate the Immigration into Ontario of Certain Classes of Children," by which I was appointed Inspector of Juvenile Immigration Agencies, I have the honour to submit herewith a report of enquiries made regarding the methods and work of such institutions.

I have visited the various agencies coming under the terms of the Act and have endeavored in the following report to give such particulars of each one, as well as such information on the general subject, as might be helpful in arriving at a correct knowledge of this important branch of immigration.

In order to understand the great extent of this work, and the consequent reasonableness of some measure of Ontario supervision the following table might be given, showing the agencies in existence and the number of children placed out in Ontario by them since the organization of juvenile immigration work in 1870 to the present time :

BRITISH CHILDREN PLACED IN ONTARIO 1872 TO 1897.

Agency.	Boys	Girls.	Total.
Marchmont Home, Belleville	4,453	2,158	6,611
Dr. T. J. Barnardo	5,000	1,536	6,536
Dr. Stephenson	1,065	406	1,471
Miss M. S. Rye	200	4,200	4,400
Miss Macpherson	2,608	1,289	3,897
J. W. C. Fegan, Toronto	1,400		1,400
Wm. Quarrier	1,411	1,089	2,500
Southwork Catholic Emg. Society	130		130
Mr. Middlemore			1,000
Other smaller agencies			1,000
Total	16,267	10,678	28,945

In addition to the above figures, over ten thousand children have been placed in homes in other parts of Canada, but Ontario has always been regarded as the most desirable province for work of this class. Although recognized in an official way by the Dominion Government, no special federal law has been passed regulating the class of children that would be acceptable, or defining the extent of supervision that would be required in this country from those responsible for the presence of these children—so largely dependent upon the kindness of foster parents or employers.

Naturally in such a large work, engaged in by a number of separate organizations, abuses would creep in, and these abuses were talked about year after year, until at the present time the defects have almost completely overshadowed the worthy and commendable features of the work. It was said that defective, crime-tainted children were brought to this country; that they graduated into our prisons and asylums; that even the healthy, well disposed children were placed in undesirable homes to be ill-treated and overworked, and that the agencies were well paid for relieving English poor rates of a heavy burden. All these charges were aggravated from time to time by sensational reports of crimes committed by these children, or barbarities to which they were subjected.

In the absence of any law on the subject, or any government officer holding direct control of the work, isolated cases, vague reports and hearsay stories, became settled beliefs, until to-day there are thousands of good people united in condemnation of the whole movement, who base this condemnation entirely on what they have heard or read in the newspapers. It is undoubtedly true that there have been grave abuses and radical defects in the work of some of the agencies, but these, I believe, were incidental to and not characteristic of the whole work. Had there been in existence from the first a law such as we have in this province to-day, the abuses and defects would, in all probability, have been overcome, and the public would have been in a better position to judge of the success or failure of this system of immigration.

To Ontario was left the task of introducing a measure that would meet the popular wish for definite action. By many the demand was made for an entire prohibition of the work, but it was felt by the government that a law that would eliminate the objectionable features would best meet the situation, at all events until some further information was secured as to the careers of the youthful immigrants in this country.

The Act as adopted contains three great principles: First, that only respectable children of sound physical condition should be brought to Ontario; Second, that each agency should have a thorough system of supervision during the minority of their wards, and third, that the work should be conducted under government inspection.

Summary of the Act.

Without reprinting the entire Act, the following summary will give those who have not the Act itself a fair idea of its main provisions:

After defining the meaning of the word "society or agency," and defining the terms agent, inspector and examiner, sec. 2, states that the Lieutenant-Governor-in-Council may authorize any society or agent to engage in the work of providing neglected or dependent children with foster-homes in Ontario. Under this section it is necessary for each person or agency engaging in the work, to make a formal application to the Government for recognition as an organization entitled to carry on operations.

Section 3, provides for the inspection of the work of each agency four times a year. This inspection has been objected to by some engaged in the work as too frequent, and it has been pointed out that in the case of all other charitable institutions a half-yearly inspection is customary. It was felt, however, by the Government, that for the next two or three years at all events, it would be wise to have frequent inspection so that the class of work carried on could be carefully studied and some conclusion arrived at as to the success or failure of the children after being placed out in Ontario.

Section 4, requires certain data to be kept by each of the agencies showing the history records of the children and their subsequent movements.

Section 5, requires each agency to maintain a careful supervision over the children they bring out until they have attained the age of eighteen years. The importance of personal visitation of children in foster-homes is emphasized—each child to be visited at least once a year. The age eighteen has been objected to as too high, but this is in harmony with Canadian child-protection laws, which seek to protect dependent children until they are fully able to look after their own interests. The provision that children must be visited and looked after in this country is one of the most important in the Act, for children have gone astray in the past and others have been abused, who would probably have acted and been treated all right had a close supervision been maintained by those responsible for them.

This clause empowers the agency to act as guardian for the purpose of protecting the person and earnings of children, and by a sub-section the age of the child as given on its entering into Ontario may be given in Court as the bona fide age of the child in any action brought under Provincial Legislation. Unfortunately it is necessary to have a clause to this effect in the Dominion Criminal Code before children can be fully protected from assaults of a criminal nature. Many cases of a flagrant character have fallen through owing to the difficulty of proving the exact age of some of these children whose early history was obscure and whose birth-place was far from the scene of action.

Section 6, requires each agency to have a proper home or shelter in this country for the reception of children and to which children may be returned at any time from foster-homes. This provision was introduced to guard against children being brought out, placed in situations, and then turned adrift in the event of their not suiting

Section 8, places the obligation on the party taking one of these children to see that it is returned safely to the agency in the event of its not getting along well. In the past there has been a number of cases where farmers have taken boys, and when they found they were not able to do the work required of them, have simply turned them adrift. This is made an offence, and anyone abusing any of these children in this manner may be tried before two Justices of the Peace and a fine imposed.

Section 9, further emphasizes the responsibility of those receiving these children and in a sub-section it is made an offence for neighbors to entice children from their foster homes with promises of higher wages.

Section 11, requires a certificate to be procured from an examiner before the child leaves the Old Country to the effect that he is satisfied that the child is in every way the right class to come to Ontario.

Section 12, makes it an offence for any Society or agent to bring into Ontario any child, who, from defective intellect or physical infirmity, is unable to follow any trade or calling, or any child of known vicious tendencies or who has been convicted of crime.

Section 13, states that if any child brought into Ontario, shall, within three years thereafter become a charge upon the funds of any municipality, private charity or the Province, the agency may be required to pay the cost of maintenance, and to return the child to the place whence he came into this Province.

Section 14, calls upon the resident agent of the society to promptly investigate all reports of ill-treatment, over-work, etc., and to see that parties guilty of offences against these children are brought to justice. The right of these children to attend the public schools of the Province is set forth and it is required that the children should be sent to school during the school age.

Under section 15, the sheriff of the county or the head of any public institution is required to notify the Superintendent of Neglected and Dependent Children of Ontario, of any British child committed to their care as a dependent.

Section 16, empowers the inspector to investigate special circumstances arising under the Act, and requires him to make a report to the Minister of the Crown regarding operations under it. Any society failing to comply with the provisions of the law or showing marked inefficiency may be prohibited from continuing operations.

SUPERVISION OF DOMINION GOVERNMENT.

The Dominion Government has for the past twenty-five years exercised some supervision over the agencies engaged in colonizing children. This work was formerly under the Agricultural Department, but is now a branch of the Department of the Interior, and will probably come under the direction of Mr. Frank Pedley, the recently appointed Superintendent of Immigration. Printed forms are supplied by the Government to the agencies in Great Britain on which are written the names of the children intended for Canada. This list is signed at Liverpool or other port of debarkation by an officer of the Dominion Immigration service who looks over the party to see if they are in apparent good health. Each party is further inspected on arrival at Halifax, Quebec or Montreal by a health officer and a Dominion Immigration agent, and each officer has authority to reject any child who does not appear to be sound in mind or body. The officer at the port of entry retains one of the certified lists, while the other is forwarded to the department at Ottawa.

There are two distinct classes of children—the forms and regulations being different for each. The children coming from purely benevolent organizations, such as private or church orphanages and rescue homes form the one class, while the other is confined to children from the workhouses, under the control of the local government boards.

The following are the forms at present in use :

Form A.

List of Immigrant Children on Board SS. leaving on 18 arriving at on 18

I, agent for , having a distribution home at , do solemnly declare that the (No.) children named in the following list are brought out to Canada for the purpose of settling therein, that they have not been the inmates of workhouses, and that they have passed a satisfactory medical inspection at the port of departure, and I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath, and by virtue of *The Canada Evidence Act, 1893.*

(Signature)

Declared before me at this day of A.D. 18

(Signature)

Form B —(Workhouse children).

I agent for , having a distribution home at , do solemnly declare that the (No.) children named in the following list, having been inmates of workhouses, are brought out under the authority of the Local Government Board for the purpose of settling in Canada and that they have passed a satisfactory medical inspection at the port of departure ; and I make this solemn declaration conscientiously believing it to be true and knowing that it is of the same force and effect as if made under oath, and by virtue of *The Canada Evidence Act, 1893.*

(Signature)

Declared before me at this day of A.D. 18

(Signature)

Under form A the children selected by Dr. Barnardo, Mr. Quarrier, etc., come, while under form B are grouped the children selected from the workhouses favorable to emigration. About three-fourths of the children settled in Ontario come under class B—that is, from schools and orphanages managed by private philanthropic societies.

All the societies and agencies claim to make a careful selection of the children intended for this country, and to conduct a medical examination on their own account.

In the case of workhouse children, the following questions are answered and certified to by a qualified medical man, a form being filled out for each individual child :

———— UNION.

EMIGRATION OF ORPHAN AND DESERTED CHILDREN.

Certificate of Health of
at present maintained at
and who is about to emigrate to Canada.

Medical Questions.

1. Has the child any cardiac disease ?
2. Is he generally sound and healthy ?
3. Has he perfect vision ?
4. Has he perfect hearing ?
5. Has he the use of all his limbs ?
6. Has he sound intellect ?
7. Has he sufficient bodily strength for farm work ?
8. Has he any tendency to scrofula or consumption or any natural infirmity ?
9. Is he perfectly free from any cutaneous disorder ?
10. Is he subject to epileptic or other fits ?
11. Has he had the small-pox ?
12. Has he been vaccinated ?
13. Is it your opinion that the child is in all respects a suitable subject for emigration to Canada ?

Signature of Surgeon
Address
Date

No aid is given by the Dominion Government toward the settlement of children from the workhouses, but in the case of children brought out by benevolent societies a contribution of $2 per head is made toward expenses. The total amount contributed by the Dominion Government in this way would average about $6,000 per year for the past six years, being paid out in small sums to eighteen or twenty different organizations.

There has been a good deal of opposition in England to the emigration of workhouse children, owing partly to the fact that picking out the best children and sending them away left an inferior class in the schools, and robbed the army and navy of some promising recruits. In 1874 Mr. Andrew Doyle, of the Local Government Board, visited Canada, and on his return made a report strongly condemning child emigration for the reason that the absence of supervision in Canada left the children liable to get into the poorest homes and to be greatly overworked and abused. Various similar charges made in England led the Dominion Government in January, 1878, to institute a system of inspection of workhouse children with a view to re assuring the Home Government that children sent to this country would be properly looked after. From that date to the present a number of Dominion immigration officers have been detailed during the winter season when other duties were light, to call on the children and see how they were getting

along. This inspection applies only to workhouse or state children, and does not apply to private benevolent organizations such as the Quarrier or Barnardo children. The report made by the Dominion officer to the department is on the following form :

DEPARTMENT OF THE INTERIOR.

INSPECTION OF CHILDREN.

Name of child
Workhouse or Institution from whence taken
By whom brought out
With whom placed
Address
Occupation
General character of the home
Work in which the child is engaged
Date of birth
Health of the child
Church and school attendance
General character of the child
Terms on which the child is kept
REMARKS :

No. Date of Inspection
Inspector

These statements are sent to the Local Government Board in England, but so far as cI know there has been no analysis made that would give any definite information as to e proportion of children who do well or fail. It might be remarked here that while s government inspection entails a heavy expense for travelling allowances, etc., it has ecome, in Ontario at least—almost a work of supererogation, since the philanthropic agencies bringing the children to this Province for the Local Government board, have visitors of their own, who from a knowledge of and sympathy with the children, would be able to accomplish more than an outside government inspector, simply calling in the usual routine of duty.

COMMENTS OF DOMINION OFFICIALS.

In the last report of the Department of the Interior, (1896), Mr. John Hoolahan Dominion Immigration Agent at Montreal, writes as follows :

Juvenile Immigration: The juvenile immigrants passing through Montreal to the various homes in Ontario, as well as those remaining here, were of a desirable class. They appeared to be healthy and intelligent children. Reliable guardians accompanied each party of children from the homes in Britain to their destination in Canada.

Inspection of Juvenile Immigrants: In accordance with the instructions of the Department Mr. A. Regimbal of my staff paid an official visit of inspection to seventy-five immigrant children who had been brought into Canada under the auspices of the various philanthropic societies of Great Britain. Mr. Regimbal states that the work of inspection lasted about two months, the territory travelled over comprising several counties of eastern Ontario and the western counties of the Province of Quebec. The inspection proved satisfactory, the large majority of the children being placed in the homes of respectable farmers who take a deep interest in their moral and physical welfare.

In the same report, Mr. J. M. McGovern, travelling immigration agent, writes :

Inspection of Immigrant Children and Distributing Homes: Instructions having been forwarded from Ottawa, I left here on the 14th March to make an inspection of the immigrant, or as they are termed, pauper children, and the homes that place them out in different parts of this province (Ontario). The instructions were very particular as to the information to be obtained regarding these children, viz., the terms on which they were taken by employers, their general

character and habits, state of health and physical standard, how they were situated, and the statements of the employers as to the satisfaction they were giving or otherwise. The home inspections were also to be carefully made, and a full report obtained as to their ass sting in placing out the children.

General Work of Inspection and Reports Made: The widely separated places at which the children were placed made it necessary to visit many parts of the province, make long trips by rail, and frequently drive from thirty to fifty miles per day. I interviewed each child and the employer, and when necessary people in the vicinity, and made a full report of each case on the forms provided for that purpose.

I visited the different homes at Toronto, Peterborough, Hamilton, Stratford and Niagara-on-the-Lake, carefully inspected the institutions, made particular inquiries as to how the children were obtained before being brought to this country, the general system adopted in obtaining homes for them, the arrangements made regarding their earnings, and to what extent the homes assumed the responsibility for their welfare and general good conduct during the period of their contract with the employers. It was also considered advisable to ascertain the estimation in which the homes were held by people in their vicinity, which was done by interviewing some of the principal residents. Careful attention was given to all these matters and reports giving full particulars forwarded to the department.

Observations and Suggestions: During the trip of inspection I ascertained that there was a very considerable feeling against this class of immigrants, and frequently heard the homes severely criticized, but on careful inquiry found it difficult to get anyone who was willing to make a direct charge or complaint and allow their names to be used in connection with the same. Some of the homes are more particular than others in looking after the welfare of the children after they leave the institutions, and it is important that particular attention should be given to this part of the work, as the children are liable through bad advice and sometimes for good reasons to leave their places, and unless immediately looked after may become wanderers through the country. I beg to state that I believe it would be beneficial to both the government and the homes if strict regulations could be made for the homes to have inspectors visit every child they place out, at least twice a year for the first three years, and make careful reports and forward certified copies of same to the department. This, with the yearly inspection by an official of the department, who could be authorized to visit any child in the district he travelled, would enable the government to obtain a full knowledge of the system, and make any necessary improvements, which should do away with the unreasonable prejudice against this class of immigration that the government are blamed so frequently for encouraging. The very general discussion about this matter and the resolutions passed last year by some of the county councils would appear to make it necessary that some action should be taken, and I may state that the officials of the homes invariable expressed their willingness for a full and impartial investigation of their work.

Dominion Immigration Law.

In the Dominion Act "respecting Immigration and Immigrants," the health officer at any quarantine station is empowered by the following clause to reject any defective child or adult who may be found upon the list of passengers. The wording of the Act is as follows:

17. The medical superintendent of every quarantine station shall examine into the condition of the passengers carried on any vessel forthwith after the anchoring at such station of such vessel, in compliance with the requirements of any Act, Order in Council or regulation respecting quarantine then in force; and for that purpose the said medical superintendent, or other competent person thereunto appointed, may go on board and through any such vessel and inspect the list of passengers, and the bill of health, manifest, log book or other papers of the vessel, and, if necessary, take extracts from the same:

2. If, on examination, there is found among such passengers any lunatic, idiotic, deaf and dumb, blind or infirm person, not belonging to any immigrant family, and such person is, in the opinion of the medical superintendent, likely to become permanently a public charge, the medical superintendent shall forthwith report the same officially to the collector of customs at the port at which the vessel is to be first entered, who shall (except in the cases in which it is hereinafter provided that such bond may be dispensed with) require the master of the vessel, in addition to the duty payable for the passengers generally, to execute, jointly and severally with two sufficient sureties, a bond to Her Majesty, in the sum of three hundred dollars for every such passenger so specially reported, conditioned to indemnify and save harmless the Government of Canada and of any Province in Canada, and every municipality, municipal corporation, village, city, town, county and charitable institution within the same, from any expense or charge incurred within three years from the execution of the bond, for the maintenance and support of any such passenger.

FROM AN ONTARIO STANDPOINT.

While it will probably be held by some that a law such as this, affecting as it does so vitally the growth and progress of our country, should be a Dominion rather than a provincial measure, still the subject has been so prominently before the people of Ontario for a number of years past and the demand for action was so universal that further delay in adopting some plan of supervision, was almost impossible. Numerous petitions were received from county councils, trade organizations, etc , and probably every newspaper in the province has at one time or another editorially demanded either the prohibition of this class of immigration or strict regulations guarding against indiscriminate shipment of sickly or vicious children. That this law has been favorably regarded by other provinces is evident in the fact that the Manitoba Legislature adopted it word for word immediately, and the question is at present before the Legislature of Quebec. Possibly in the future it may be expedient to pass a general Dominion law providing an adequate remedy for the evils complained of, but in the meantime the action of the Ontario Government in deciding to initiate this movement appears to meet with general approval.

Widespread Prejudice.

There is undoubtedly a widespread prejudice among the people of Ontario against child immigration, but much of this prejudice, I am convinced, arises from a lack of knowledge of the whole work, and from the great prominence given in the newspapers to the crimes and vagaries of those who go astray. Many persons who speak strongly against the system are unable, when questioned, to give specific instances, but base their arguments upon criticisms they have heard or read. When it is remembered that during the past twenty years fully 30,000 children have been domiciled in Ontario by these philanthropic agencies, and that during that period an infinitesimally small number have been traced to penal institutions, it will be conceded that a large proportion must have done fairly well and are now occupying respectable positions in the country. It does not follow, of course, that because a person manages to keep out of goal he is therefore doing well, for he may be vagrant and worthless without breaking the law, but it is reasonable to suppose that if the proportion of law-breakers is limited, the number who go to swell the permanent pauper class will also be limited. Dr. Barnardo has claimed repeatedly that not more than two per cent. of his wards have proved failures, but this appears to be altogether too favorable an estimate. A careful scrutiny would probably considerably increase this percentage, but not, I think, to any alarming figure. In the past no independent statistics were prepared, so that there has been no means of computing the degree of success attending the work from a Canadian standpoint. Girls particularly who fail are soon lost to sight, and there is a constant temptation to the home authorities to cover up these cases for fear of injuring the general work. Then, again, boys frequently run away, and though the strong probability may be that they will turn out badly, they are not included in the classification of wrongdoers.

Sensationalism.

On the other hand, the startling accounts published in the newspapers of crimes committed by English children are not always reliable, and grave injustice has often been done by editors copying such stories from contemporaries without verifying the facts. Last year a sensational article was printed in a country paper to the effect that a girl—an English waif—had tried to poison a whole family and had then disappeared, saying that she was going to drown herself. This story was copied into a Toronto daily, and was soon on its rounds through the province. Numerous editorials followed, all denouncing child immigration on the strength of this article. On investigation I found that the girl was born in Toronto and lived for years in one of our charitable institutions, and that there was no ground for referring to her as an English waif. Further, the original offence was of a trifling character, and not sufficiently important to be classed as a serious crime. About the same time another sensational story went the rounds of the papers to the effect that a farmer returning home found that an English youth in his employ had attempted to assault his wife, and he unceremoniously kicked him off the premises. I immediately wrote the farmer for full particulars, and he replied that he did not know whether the lad was English or not, as he had been living in the neigborhood for some years, and had not been engaged from any of the homes. In other cases which I have investigated the fault was often with the employer, the children having been driven to desperation by constant ill-treatment. In fact it may be taken as rule that where a child is fairly and considerately treated it is rare that a crime of a very serious character will be committed. There are, it is true, cases in which these children do wrong and are guilty of criminal acts, and I have no desire to gloss over these, but it is manifestly unfair to hold all guilty for the fault of one, or to unduly exaggerate the offence because of local prejudices.

Ontario Act a Remedy.

Under the provisions of the Ontario Act it will be possible to remedy some of the abuses complained of in the past, and the great interest shown in this question by the Canadian people will undoubtedly lead to careful selection of the children intended for settlement here. If, after all the facts set forth in this report are considered, there remains a reasonable doubt as to the wisdom of allowing this work to continue, there should, during the next year, be a full and searching enquiry and a decision arrived at once for all. For the agitation that has been kept up during the past few years has been tremendously hurtful to these children, many of whom are handicapped in their desire to live uprightly by the wholesale abuse and misrepresentation to which they have been subject. In the case of young girls particularly, this constant reference to "slum" and "outcast" children has exposed them to the base designs of disreputable men, who readily believe the slanders that are so lightly scattered abroad. My observations lead me to believe that many of the old country girls who go astray would have remained respectable if given half a chance to do so. Public opinion is so much against these children that all sorts of iniquities against them are prevalent, and the Homes have practically abandoned the attempt to secure convictions in the courts. Much of this public opinion seems to be based upon exaggerated assumptions, and if this is correct

then it should be the plain duty of the Christian and philanthropic portion of the community to bring about a public sentiment that will protect these motherless children even more surely than any law or court of justice could do. These boys and girls are not foreigners, but are as much a part of our blood and race as though they had been born within our borders, and in the matter of protection from injustice there should be no distinction made between them and those who are native-born. When making enquiry about a year ago into a case where a young girl had been grossly ill-used, a prominent member of the community made the remark to me, as a sort of extenuating circumstance, that the girl was "only an English child." Surely the fact that the victim of ill-treatment happens to be an orphan from the mother land should not make any difference in the sentiment of pity and indignation—and yet it is to be feared that often even the best people show some indifference when they learn that the child ill-treated is not of Canadian birth. Where an offence has been committed, especially one that is deliberate and extending over a period of time, the wrongdoing should not be passed over and allowed to go unpunished simply because of the accident of birth and environment. Public sentiment on this point undoubtedly needs educating, and strong moral support should be given to the work of child-protection, even if the boy or girl in question happens to be "only an English child."

Hereditary Taints.

In addition to the moral aspect several charges have been made against these children that should be considered. One is that some of them are tainted with hereditary blood diseases such as syphilis, and the other that they compete unfairly with native labor. Regarding the first it would certainly be a grave charge if well founded, for the transmission of disease and a weak, stunted manhood would be extremely hurtful to future generations of the Canadian people. It is among this class that syphilis would be most likely to exist, and this is one of the principal disorders that would debar a child from acceptance here. All the agencies claim to have exercised care on this point, but occasionally a child may develop the symptoms in this country who at the time of selection appeared to be free from any defect. If the agencies will in the future co-operate in collecting and deporting such children, as they express a willingness to do, then the evil may not prove so great as medical men have feared. Some of the diseases to which the children are liable such as loss of mental vigor, defective vision or hearing, do not culminate until the eighteenth or twentieth year and in these cases, difficult to cover by legislation, much must depend upon the humanity of the agency responsible for the child's presence in this country—indeed I have ascertained that for years before the Act was contemplated many of the agencies have been in the habit of assisting and relieving those whom they had brought out, and who after being a number of years in the country have been overtaken by accident or ill-health.

Supervision.

While supervision is absolutely essential in any system of placing-out children, it is almost doubly so when the children in question come from another land, and are regarded, whether rightly or wrongly, with some degree of suspicion by the community around

them. It would not be fair to say that those taking these children belong to an inferior class, but this much may be said—that the best class of people, as a rule, seek native-born children for adoption, while the element of work, present or prospective, enters largely into the calculations of those applying to the English agencies. Unless the spirit of Christian benevolence prompts in some measure those who apply for a foster-child, there is an ever-present danger that full justice will not be done to the boy or girl, and injustice, permanently continued, will undoubtedly rankle in the child's heart, and mar the character in the process of formation. Sometim s a child is sent to a home that is totally unsuited to it, and remains there, perhaps, for years, until a climax is reached, and he or she runs away, or gets into some serious trouble. Hence, the need for a thoroughly efficient system of supervision in connection with every placing out agency. In principle this is freely conceded by intelligent workers for children, and if there is any neglect or omission, the usual excuse is on the ground of the expense involved.—And it must be confessed that this is a very strong argument. Societies engaging in this work are supported by the voluntary contributions of the public, and are in constant perplexity lest the end of the year should see them financially in arrears. Then the claims of the general work are so great that they are apt to feel that their aim is fairly well accomplished, when the child has been transferred to the care of people who promise to look after its future. If money were freely forthcoming it would be right and desirable to maintain a watchful care over the children until they are fairly established in life, but in straightened circumstances it is impossible to live up to ideals. This, in brief, is the reason given for sending away children to strange homes and never seeing them again, to ascertain their true condition, encourage them in well doing, and commend them to further effort.

It is true that adequate supervision involves considerable expenditure, but it is also true that money spent in this way is as remunerative as that spent on any other part of the work. In fact, if the supervision is neglected it may involve the sacrifice of the money and effort put forth in the first instance; and even if there is no such loss, the child may justly entertain a feeling of desertion on the part of those responsible for its care. Supervision or personal visitation of each child in his or her foster home is needed to rectify any mistake that may have been made in the placement—the people may have misrepresented their position, they may have a bad name in the neighborhood, or from a variety of reasons the home may not be just the right one for the child. The visiting agent, if the right person for the work, will promptly remove the child or insist on such conditions as may appear advisable. Then, in the turbulent period of adolescence, the visitor may be able to speak helpful words of encouragement to both child and foster parents, smoothing over little difficulties and bringing about reconciliation where separation seemed inevitable. Often the child will commit some petty offence—the theft of a small article, a hasty answer or a sullen temper—and the visitor, by speedily ascertaining the trouble, may save all sorts of mischief later on by a few words of advice or exhortation. On the other hand, if the work imposed is too heavy, the clothing insufficient or the sleeping accommodation bad, a candid talk with the foster-parent may mean much better treatment of the child and the removal of consequent discontent. Experience has

proved over and over again that where the child is never visited or enquired after the foster parents are apt to feel that it is of no account and grow careless in the matter of clothing and other privileges. Even among the best of these children there is great restlessness between the ages of fifteen and seventeen, and the occasional visits of some one from "the Home" can do much to settle and calm them. When they fully understand that some one is interested in them, is watching over their interests and ready to help them in any emergency they are much more likely to do well than when left entirely to their own resources and the mercy of those with whom they are placed.

So far, supervision has been advocated in the interests of the children themselves, but it can readily be seen that it is also in the best interests of the community in which they are placed, and is further necessary because of the ever-watchful public eye that will condemn, sooner or later, any work, especially of a philanthropic character, that does not come up to the required standard of humanity and justice. If a child is systematically neglected, over-worked, poorly clad and given insufficient food, the physical condition will degenerate and the mind and character will be warped, with the possible result that a few years later may see the young man or woman in need of public maintenance, since in case of illness there are no relatives to whom they can turn for aid. For this reason, if for no other, the community at large is justified in insisting that every reasonable precaution be taken to ensure proper treatment for these children during the period of their moral and physical growth.

All the agencies claim to visit their wards from time to time with the exception of the Niagara Home carried on for many years by Miss Rye. Dr. Barnardo has a staff of visitors constantly on the road, while the other agencies, in addition to one regular visitor, employ occasional help during the summer months. Thoroughly qualified and experienced persons, should be selected for the supervision of children in foster homes, and as far as possible ladies should be employed for the visitation of girls. Where it is not practicable to have both men and women visitors, then it is safe to say that a woman can more effectively discharge the duties of visitor to both sexes than a man. A woman can generally investigate and take action in the case of boys as well as girls, while a man is altogether unsuited to make the many enquiries necessary in the case of girls. But whether a man or a woman, the visitors require to be thorough, painstaking, tactful and firm, not easily put off or prevented from ascertaining the true condition of affairs, and learning if the child is in every respect fairly treated. There is a danger in the employment of temporary help that those selected may not have the qualities requisite to make a visit that will prove to be more than a mere form. Such visits have been made—the form without the reality—and this is a danger that has to be constantly guarded against. Sometimes the visitor will be assured that the child is not at home while she may be hidden away in an upstairs room, and efforts are frequently made to prevent private conversation between the child and visitor, for fear some unpleasant facts may be revealed. Usually, the more obstacles there are placed in the visitor's way, the greater the need for close observation and enquiry.

It is a good plan in addition to visitation to supply the child with printed leaflets, addressed envelopes, etc., so that he or she may be sure to remember whom to communicate with in the event of unkind treatment, sickness, etc. It has been found that some of

the younger children forget the agency to which they belong, and except in the cases of genuine adoption, it is not wise in their own interests that they should be left in ignorance.

Wages.

Nearly all the British children are placed out for wages when they are over twelve or thirteen years of age. As a rule, they receive a higher rate of remuneration than Canadian children of the same age placed out by the various child-saving institutions. This is accounted for by the fact that more attention is paid by local institutions to home advantages and a full share in the family life, and any payments are allowed to go towards clothing, etc. Where market wages are paid, there is the danger that an undue amount of work will be expected in return, and this consideration has usually been at the bottom of the ill-usage of children. Some of the agencies collect the wages of the children and pay it over to them in a bulk sum when they attain the age of eighteen, others allow the money earned to be paid direct to the child, only requiring that an account be kept and the boy or girl encouraged to spend judiciously. No general rule could be laid down in this connection, but probably the weight of testimony would lean to the latter method. When a lad comes suddenly into possession of $80 or $100, or in some cases $150, after a long period of self-denial, he is apt to loose it before very long. He either wants to stop work and take a trip home to the old land; buy some expensive and unnecessary article, or is induced to "loan" it to some friend, with the strong probability of never seeing it again. On the other hand—if he receives his money directly as he earns it he is more likely to be content, and to feel that there is some reality about the payment business. He may spend it unwisely at first, but the likelihood is that this would soon correct itself, and the experience of handling money would have a good educational effect. It is true that at eighteen he may only have $10 or $25, but to offset this he will have gained an experience that may be worth far more than $100 to him. This plan would be on the same principle as teaching a boy honor by trusting him, and appealing confidently to the element of manhood in him.

Economic Considerations.

As to the economic aspect of this question I would speak with diffidence, for I have not made any special study of the subject, and can only give the impressions gained in the course of an enquiry into the general features of child immigration. One thing is certain—and that is that there is a genuine demand among farmers for the services of these children. There is not an agency engaged in the work that does not receive more applications then they have children. Each party of fifty, seventy-five or one hundred children is almost completely disposed of within two weeks after arrival, and the requests for children seem to increase rather than diminish as time goes on. This might be expected in the case of older agencies whose work would become well known through the children sent out year after year, but even the youngest agencies in the field relate the same success in rapid placement. The reason for this would appear to be that small families prevail as a rule in the agricultural districts, and when there are four or five sons and daughters it is seldom that more than one or two remain on the farm. They

go off to the colleges, professions, to the city shops and factories, to be typewriters or conductors on street cars, and as help is imperatively needed on the farm the boys and girls from the Old Country take the places of the sons and daughters. They become to all intents and purposes members of the family, dining at the same table, going to the same church service and social entertainment, and working side by side with their master in the field or the barn, or with the mistress in the kitchen. The wages paid are not high, and many struggling farmers who could not afford to pay for adult labor are able to take a boy or a girl or both, and give home advantages which to them are worth more because more needed than any mere cash payment. Each child goes to its new home with a $20 to $30 outfit of clothing, and if this is kept properly renewed the agency is satisfied to allow the child to remain without wages until twelve or thirteen years of age. After that yearly engagements are made, starting at $2 or $3 per month, and increasing gradually until the eighteenth year when the child is able to do his or her own bargaining. Every agreement entered into gives the agency the right to remove the child at any time if the terms are not being observed, or if the moral influences are not all that could be desired. The old custom of binding out a child irrevocably until eighteen years of age is being abandoned, as the yearly engagement has been found to secure better protection, and also to make the boy or girl more contented. The agencies are gradually coming also to trust the children with their own wages from the start so that they may realize that they are receiving just what they earn, and that the interest of the home in their welfare is purely benevolent. It is hard to say exactly what proportion remain permanently in the farming industry on attaining manhood and womanhood since the tendency to crowd into cities is not confirmed to the native-born, but it is safe to say it is fairly large. Of the two sexes I judge that the proportion of girls who leave the farm is greater than among the boys, owing to the large and constant demand for domestic servants. Notwithstanding all the complaints that have been made against child immigration it is only reasonable to suppose that if the work were suddenly stopped many a farm home would be in a quandary to know how to get along.

Available Homes not always Desirable.

But while there are a large number of homes available for these children, it should be borne in mind that they are not all homes where it would be desirable to place a child. On the day of writing this a letter comes to hand which reads as follows:

"On our visit we came across a little fellow from the English Home. He is quite bright and worthy of a better place than he has now. The people are very poor, the home is untidy, for the woman has nothing with which to make it comfortable and there are three small children. They live on a rented farm. A gentleman living near by saw that the boy was not being well treated, had not sufficient nor proper food, and was not in school. He notified the home and they sent a man to investigate, but instead of removing the boy the officer wrote an abusive or rather an insulting letter to the gentleman who made the complaint."

The children are so rapidly placed on their arrival from the Old Country that there is a great danger that they will not all get into proper homes. While this is a serious matter in the case of boys, it is almost ruinous in the case of girls, who if they do not get with people of good reputation and christian principles, will have a poor chance

indeed of making headway in the world. Recently a case was brought to my attention where a girl was placed in a home by one of the English agencies, although the woman was known for miles around to bear an unsavory reputation, and I know that applicants who have been rejected as unsuitable by Canadian children's societies have almost invariably succeeded in getting an English child. Probably the lines as to the class of homes cannot be drawn too strictly, for otherwise, all the children brought out could not be so quickly provided for, and then of course it must not be concluded that because the people are poor the home is, therefore, undesirable. The point on which all child saving and child placing agencies should be assured is, that the people are unquestionably possessed of moral principles and will at least have the desire to protect these children from any evil association. Among cases brought to my notice was one the other day in which an English lad had been placed with a man who was a professed infidel. Such a person might be able to give a child every temporal care, but it is questionable whether any philanthopic society is justified in placing one of its wards in the charge of a man who is publicly known to have no religious convictions of any kind. Under the Act one of the duties of this office in the matter of supervision will be to call attention to any defects that may be found, and to urge, rather than insist, on a higher standard in the general management of the work.

Over-work and Ill-Treatment.

The charge is often made that this species of immigration is child-slavery pure and simple, but there is no legitimate reason why it should be so. Farm work should be healthful and enjoyable employment for young people, if the employers are reasonable and kindly disposed. And it is toward the elimination of cruelty and hard, close drudgery, and insistence on the humane treatment of every boy and girl, that the Ontario Act tends. It is for the detection of ill-usage and injustice that personal visitation by representatives of the Home is made a prominent feature, and there are penalties set forth for those found guilty of constant abuse of these children. Unfortunately there have in the past been cases brought to light forcibly illustrating the need for vigilance in protecting children from cruel task-masters, but there is hardly sufficient ground for the sweeping charge that this is the prevailing condition.

Restlessness of Children.

One of the chief difficulties which all who are engaged in this work have to contend against is the restlessness which takes possession of many of the children when they are about sixteen or seventeen years of age. They get the idea that they can do better by striking out for themselves, and in this they are unfortunately too often encouraged by the farm hands and others with whom they come in contact. Promises of higher wages are held out as inducements for them to leave the situations provided for them, and they do not find out until too late that the higher wages are "promises" only, and that those who thus tempt them to leave their places will not scruple to take advantage of their inexperience. Once having broken away from the control of the "Home," they are in danger of becoming wanderers, with precarious employment in the busy season, and if they drift to the towns and cities the likelihood is they will get into bad company and

swell the ranks of unskilled labor. Clauses have been provided in the Ontario Act prescribing a penalty for those who entice children from the situations in which they are placed, and also requiring an employer to at once notify the Home when the child leaves without permission. It is here, also, where a visitor can do important work by reasoning with the child, and by mutual arrangement removing as far as possible any cause of complaint. No general government or other officer could possibly accomplish as much in this direction as a person directly connected with the Home which brought the boy or girl out, and conversant with all the facts of his case.

Difficulty of Establishing Age in Criminal Actions.

During the past summer I visited Ottawa and waited upon a number of Government officials in connection with this Act. One of the greatest drawbacks met with by the English agencies in the past has been the difficulty of satisfactorily proving in Court the exact age of a child, in trials of a criminal nature, and also the fact that the local agents were not recognized by the courts to be the guardians of the children. These points are covered by the Ontario Act, but it is necessary that the legislation should be federal in order to meet cases coming under the Dominion Criminal Code. I had the pleasure of discussing this subject with the Minister of Justice, Sir Oliver Mowat, and found him willing to place a suitable clause in the amending Act then engaging his attention. This Bill passed the Senate but was not taken up in the House of Commons, owing to lack of time. It is to be hoped that such a provision will yet be made law, not for the sake of the children so much as in the general interests of public morality.

Inspection at Liverpool.

Hitherto the only inspection of children intended for Canada, was that which took place on the docks at Liverpool. As to the value of this inspection I cannot speak from actual observation, but from all I have heard it has never been a thorough one or anything more than a formal compliance with a departmental regulation. Several of the agents of the work in Canada have privately admitted to me that the inspection was more or less superficial. In future the aim will be to have the inspection conducted, as far as possible, in the homes or institutions where the children reside at the time of their selection. Arrangement will be made whereby notification will be sent by the societies to Mr. P. Byrne, the Ontario immigration agent at Liverpool, to the effect that a certain party is being made up for Ontario, and could be seen on any specified days for the purpose of certification. Mr. Byrne would then visit the home and see the children in their natural surroundings and with all the history data at hand for reference. Each child could be brought forward individually, and in half a day a party of forty or fifty children could be passed upon. In certifying the children, the examiner would have large discretionary powers, though suggestions would be sent him from this side from time to time. For instance, the age and general disposition of the child would have to be considered, and the length of training it had received would also be an important point. Among the objectionable features which the examiner will be asked to bear in mind would probably be the following: Illiterate children over ten years of age; lads rescued

from vagrancy who have not been a sufficient time in training to warrant their settling down quietly to the monotony of farm life; girls between fifteen and eighteen years of age should only be sent in special cases, as they are liable to be restless, and if they defy authority the agent is rarely able to enforce obedience; children guilty of crime or serious immorality or children showing any traces of hereditary disease, or children whose general history offers strong presumptive evidence that they will not do well. Young children do better than older ones, as they grow more rapidly into the ways of the country, and grow up in greater contentment with their lot.

Certificate of Examiner.

The following is a draft form prepared as a certificate of the examiner in Great Britain.

Statement of Children Intended for Ontario.

From . Left on 18 .
Arrived at on 18 . Canadian receiving home .

I, do solemnly declare; that I am responsible for the party of children named herein, now leaving Great Britain for settlement in Ontario, that I have made or caused to be made careful inquiry into the past history and state of health of each child: that I believe them to be honest and well-inclined, sound in mind and body, and free from any defect or imprint of blood that would render them undesirable settlers to the people of Canada: that to the best of my knowledge and belief they comply with the requirements of the laws of Canada or any province thereof.

Date

Certificate of Dominion or Provincial Agent.

I, do solemnly declare: that I am a duly appointed agent of the and in such capacity visited the located at for the purpose of inspecting the children named herein: that each child was brought before me separately, and the history and particulars laid before me; that as far as I could judge the children are in sound mental and physical health, are free from any evident criminal tendencies, and are in my opinion selected in compliance with the provisions of the laws of the Dominion and the Provinces thereof.

Date

Certificate of Agent at Port of Entry.

I, do solemnly declare that I am a duly appointed agent of the at , that the children named herein arrived at this port on destined for , that they appeared to be in good health, and in every respect suitable for settlement in Canada.

This form is to be filled out in duplicate, one copy for the Immigration Branch, Department of Interior, Ottawa, and one copy for the Superintendent of Neglected and Dependent Children of Ontario, Parliament Buildings, Toronto.

Other Side of Certificate.

Across the top of the other side of this form will be questions somewhat as follows:

Name of child.
Date of birth.
Institution from
Address of Institution.
Length of time there.
Can child read and write.

Societies Engaged in Child Emigration Work.

So far as I have been able to ascertain the following are the principal organizations engaged in the work of juvenile colonization in Canada:

1. Church of England Society for Waifs and Strays, Church Home, Westminster, London, S. W., Gibb's Home, Sherbrooke, P.Q. (have taken over Miss Rye's work) Western Home, Niagara-on-Lake, Ontario.

2. Miss Macpherson, 29 Bethnal Green Road, London, England; Ontario Home, Stratford, also a Farm Home, Barnsley, Manitoba.

3. Dr. Barnardo, Stepney Causeway, London, Eng.: Ontario Homes, Peterborough, Ont., for girls, and 214 Farley ave., Toronto, for boys; also a distributing Home at Winnipeg, Man., and an Industrial Farm near Russell, Man. (Barnardo P.O.)

4. Mr. J. W. C. Fegan, 95 Southwark Bridge Road, London, Eng., and George st., Toronto, for boys.

5. Children's Aid Society, office, 32 Charing Cross, London, S.W.; Canadian Home, Shaftesbury House, Winnipeg.

6. Rev. Dr. Stephenson, Bonner Road, London, N.E.: Receiving House at Hamilton, Ont.

7. Mr. Middlemore, St. Luke's Road, Birmingham, and Guthrie House, London, Ont. (not now used.)

8. Mrs. Birt, Myrtle st., Liverpool; Canadian Distributing Home, Knowlton, Que.

9. The Roman Catholic Children's Protective Society, 99 Shaw st., Liverpool; Canadian Agency in Montreal, Quebec.

10. Manchester & Salford Children's Aid Society, boys, at Strangeways; girls, Cheetham Hill, Manchester, Sec'y, Mr. L.K. Shaw; Canadian Home, Belleville, Ont.

11. Salford Roman Catholic Protection Society, Sec., James Corrican. Children placed in Province of Quebec chiefly.

12. Children's Home, 3 Aberdeen Terrace, Clifton, Bristol; Canadian Home, Belleville, Ontario.

13. Mr. Quarrier, 318 St. Vincent st, Glasgow; Canadian Home, Brockville, Ont.

14. Lord Brassey's Home, at Indian Head, N.W.T., girls for service.

15. Southwark Catholic Emigration Society, Secretaries, Rev. Father St. John and Rev. Lord Archibald Douglas; Receiving House, for boys, Hintonburg, near Ottawa, Ontario; agent, Mr. George Croxford; agent for girls, Miss Procter, St. Anne's, 258 Lavall avenue, Montreal.

AGENCIES IN ONTARIO.

THE WORK THEY HAVE BEEN DOING AND THE FACILITIES FOR DOING IT.

Following will be found a detailed statement concerning each agency and the methods employed by them in carrying on their work. No attempt has been made to enquire into the histories of children heretofore brought to Ontario, as this did not come within the scope of the Act, but rather to give such general information as will lead to a clearer knowledge of this question. In reply to enquiries I have given the opinion that while the Act was not intended to be retrospective, those clauses which refer to the supervision and visitation of young children already in the country would be expected to be observed by the agencies interested.

DR. BARNARDO'S WORK.

The work carried on by Dr. Barnardo has attracted more attention and criticism in Ontario than that of any other agency. This is probably due to the large number annually dealt with and to the fact that the work is advertised extensively. The growth of the Barnardo homes in England necessitated some plan for successfully placing the children after their training was considered sufficiently far enough advanced, and emigration was decided upon as offering the brightest prospects for the children. In 1882, the first organized party, consisting of 31 boys, arrived in Toronto on the 10th of Augnst,—a temporary distributing Home having been opened in the neighborhood of the Union Station. The following year a party of 100 boys and another of seventy-five girls were received and placed out from the Toronto Home, and since then there has been a steady development of the work until the number emigrated to Canada under Dr. Barnardo's auspices up to the present time has reached the large total of 8,629. As the figures for the girls' branch are given under the head of the Peterboro' Home, it might be

stated that the number of boys brought out since the inception of the work was 6,200, and, deducting 1,200 that went on later to Manitoba, the number placed in Ontario would be 5,000. The original premises opened as a receiving Home were abandoned in 1884 a special building at Peterboro' having been placed at the disposal of Dr. Barnardo by the Hon. George A. Cox. The Peterboro' Home remained for a time the distributing centre for both boys and girls, but for the past eleven years has been devoted exclusively to the girls' work, and besides being the receiving and distributing centre for the parties of girls sent out from England, is the headquarters of the staff of ladies who are employed in corresponding with, visiting and maintaining supervision over the 1,900 girls who have now found homes throughout the Province.

The present Home for the boys' work at 214 Farley Avenue, Toronto, was opened in the autumn of 1886. These two institutions were supplemented at the latter end of the year 1887 by the establishment of the Industrial Farm Home in Russell, Manitoba, comprising an area of 10,000 acres, a considerable portion of which has been brought under cultivation, and where a number of the older lads and youths after coming from England receive a year or longer period of training in farm life and work. The latest development of the immigration work has been the establishment, less than a year ago, of a distributing Home in Winnipeg, intended to meet the demand throughout the Western Provinces for boys between eleven and thirteen years of age. Dr. Barnardo is thus maintaining four distinct institutions in Canada for the reception and oversight of his young emigrants, and these institutions are open at all times to those who from any cause whatever fail to remain in the situations or foster homes to which they have been sent.

Dr. Barnardo has repeatedly laid down as the essential features of his work of emigration the following principles :—

1. "That only those children shall be emigrated to Canada who are in robust health, physical and mental; who have passed through a period of careful training and have proved themselves during that period to be upright, honest and virtuous, and give reasonable promise of doing well in Canada and growing up to become decent, useful members of society."

2. "That continuous supervision shall be exercised over all the young emigrants that have been placed out in Canada, both by systematic visitation and by regular and frequent correspondence."

3. "That in the case of a total failure of any of the young emigrants the Dominion shall be safeguarded by their return to England whenever possible at the expense of the institutions."

Mr. A. B. Owen, the Canadian agent, claims that during the whole course of Dr. Barnardo's immigration work these principles have been kept constantly in view, and have been faithfully adhered to in practice, and he reiterated to me that the various Homes have at all times and circumstances been open for the return of any boys and girls who fail to keep their situations. Every boy and girl placed out has been regularly visited. Four individuals (two ladies and two gentlemen) are constantly employed from one year's end to the other in travelling about the country inspecting the children in their homes, and each visit is made the subject of a full and detailed report, which is kept on fyle in the Institutions A full and careful record of the careerof each child is kept in the registers that are provided for that purpose. These registers contain a life history of every one of the young immigrants from the time of his or her arrival in the country, showing the terms of agreement on which the child is placed, a precis of every letter received either from the child or from its employer, or written in reply; a record of each visit that has been paid, with a reference to the report, and a full note of every circumstance that from any source comes to hand respecting the child, its health conduct, welfare and progress

"Never," said Mr. Owen, "where we have been able to avoid it, has any child been left to become a burden to the Institutions or municipalities of the country. We have accepted to the full our responsibilities towards the young people under our charge, and in many cases have saddled ourselves with the burden of their maintenance long after they have reached an age and have been for a period in the country when we might be

considered as fully justified in leaving them to be dependent upon the Institutions of the country. In support of this may be cited numerous cases in which hospital and medical bills have been paid for boys and girls who have lived in the country in perfect health for seven, eight, ten or more years, but who have at length been overtaken by illness or accident. Every year we have availed ourselves in a considerable number of cases of the safety-valve against permanent trouble by returning children to England, who either were in bad health or who had been guilty of serious misconduct, or had acquired bad habits, or seemed likely to prove incorrigible. At times, indeed, we have been thought somewhat precipitate in sending children back, considering that in doing so we may be almost regarded as shutting the door of hope against them, and throwing them back into want and pauperism. We have always taken the view, however, that for the sake of others it is better to send a child back than to run any risk of its growing up to be a source of discredit to the Homes or in any way a burden or detriment to the country."

A noteworthy statement by Mr Owen is that notwithstanding the large parties brought out every season the demand for the children has never yet been otherwise than far in excess of the supply. This demand is almost exclusively confined to the farmers, no effort being made to find openings for boys in the cities or towns. "It has always been recognized by Dr. Barnardo," says Mr. Owen, "that the usefulness of these boys and girls to the country consists in their being placed and brought up amongst the agricultural communities, with the prospects in time of occupying land of their own, and aiding by their industry in the agricultural development of the country. We see no such advantageous prospects before lads of this class who have to make their way in the towns and cities, and we accept the fact that no addition is desired to the urban populations in any part of Canada.

"Every applicant is furnished with a circular giving full and detailed information as to the terms and conditions upon which the boys are placed, and is required to fill up a form giving necessary particulars as to his Post Office address, Township, Railway Station, etc., and further stating his occupation and Church membership, and informing us as to the age of the boy required. This form has to be endorsed by a minister or magistrate, who certifies that he is personally acquainted with the applicant, that the particulars stated are correct, and that to the best of his knowledge and belief the applicant is in every respect a fit and proper person to have a boy from the Home entrusted to his care. As a rule, the boys are placed at first for a month on trial, and at the end of the month an agreement is forwarded for the signature of the employer. This agreement is simple in form, and shorn, as far as possible, of legal verbiage and intricacies, but it provides for the boy being engaged for a certain definite length of time, for his being boarded, clothed, lodged, cared for and looked after, that his attendance at Church and Sunday school, and at day school, if his age requires, shall be promoted by his employer, and that he shall be paid wages at a stated rate per month, or per year, or in a lump sum, at the end of a term of years, as we consider his age, strength and capabilities justly and fairly entitle him to receive in accordance with the current rate of wages in the country. We are careful not to demand from a farmer an amount of wages for a boy that would necessitate his working beyond his size and strength in order to fairly earn, but, as far as in us lies, we strive to secure that our boys are reasonably and fairly paid for their services. As the result we have abundant justification for stating that the young people under our charge are not underpaid or taken advantage of, and if "cheap," that is, underpaid labour, were the sole or principal object of the farmers of the Dominion in taking our boys and girls, they would long since have discovered that they were failing in its accomplishment.

"In addition to those placed in situations, we have, during the past six years, 'boarded out' 948 boys who have been brought from England at ages varying from five to ten years. This 'boarding out' system has been by no means the least successful department of our work. Its advantages consist in the fact that the boys begin life in Canada at a much earlier age than would otherwise have been the case. To a large extent they receive their training in Canadian farm households and are educated in

Canadian schools, with the result that when they are ultimately placed in situations they have already gained valuable experience, and as compared with boys who receive their training in England they have far less difficulty in adapting themselves to the ways of the country and farm life."

The large amount of money paid out in the Muskoka District for the board of small boys is one of the principal sources of income in the district.

Toronto Distributing Home.

The headquarters of Dr. Barnardo's work in this country is at 214 Farley Avenue, Toronto. At the time of my visit to this Home there were twenty boys in residence, from nine to eleven years of age. Several of them had slight ailments, while the remainder were waiting until homes could be provided for them. They did not appear to be seriously defective or objectionable although one or two were delicate looking, and one boy had accidentally lost an eye on the passage out. Mr. Owen explained the details of the work as given in the above statement, and he willingly placed all the books of the Home at my service. It would be exceedingly difficult to say, as the result of an afternoon's visit, just what proportion of the lads do well, since even with the best of boys there are frequent changes of situations, and the very large number of names on the books make it natural to expect that they would not all do equally well. It seemed to me, however, that every effort was made to assist these boys, to encourage them to live honestly and industriously, and to protect them from ill-trteament and non-payment of wages by those engaging them. A noteworthy fact, too, is that with the growth of the work there has been a corresponding increase in the official staff. There is connected with the central office and engaged entirely in the boys' work, a superintendent, an assistant superintendent, bookkeeper, two visitors employed the year round, two stenographers, a housemaster, a matron and an occasional school teacher. All these officers are kept busily employed in looking after the various details connected with the supervision of so large a family. Since the first of January, 1896, 562 boys have gone to homes, and in addition to the arrival of new parties, old boys are frequently returning, for whom situations have to be found. I look with some misgiving upon the wholesale character of Dr. Barnardo's work, but I must say that if the work is large the staff is also large, and the direction is in the hands of a capable and business-like manager, who is evidently thoroughly interested in his work.

The annual maintenance of the Farley avenue home probably amounts to $10,000, while the Peterboro' branch is supported by Dr. Barnardo at an expense of about $6,000 per year. Each child sent out from England is equipped with two or three complete sets of clothing, the whole worth about thirty-five dollars.

Few people in Canada realize how much Dr. Barnardo expends in this country on immigration work. Taking the last two years, the payment for board of children in Muskoka has averaged $2,375 per month, or over $28,000 per annum, while I am informed that about $75,000 is annually expended in Canada, the proportion spent in Ontario being about $60,000 per year.

General Information Form.

The following form, descriptive of the terms on which boys are given out, might be said to apply to all the agencies, as the conditions are about the same :

Dr. Barnardo's Homes.—Boys' Immigration Agency. Founder and director, T. J. Barnardo, Esq , F.R.C.S.E., 18 to 26 Stephen Causeway, London, Eng. ; Ontario office, 214 Farley avenue, Toronto. Alfred B. Owen, agent.

For the information of parties desiring to obtain boys :

The boys range in age from ten to eighteen, and are sent out on conditions varying according to their age and capability, and the amount of work required.

A month's trial is usually allowed when the boys are first sent out, and at the end of the month, if everything is satisfactory, an agreement is entered into, the conditions of which are embodied in a simple form of agreement, which employers are expected to sign, and of which a copy is furnished by the agent.

In the case of the smaller boys, the engagement is generally for a term of from four to six years, the conditions being that the employer shall provide board, lodging, clothing and all necessaries and pay the boy a cash sum—usually one hundred dollars—at the expiration of the engagement. The object of this arrangement is to secure for the younger boys a permanent home and a practical training, in return for their services, until they have reached an age when they may be considered as capable of managing their own affairs.

In other cases the engagement is for three years, the boy receiving, in addition to board, lodging and washing, a moderate wage out of which necessary clothing is provided.

In the case of boys over eighteen, the engagement is generally for one year, but an agreement for a longer period, concluded on reasonable terms between the employer and the boy, will be gladly sanctioned by the agent of the home.

Whenever practicable, engagements are made to terminate on the first of April, that date being generally found to be the most suitable for all parties concerned.

Attendance at school during the winter months is desired in the case of younger boys.

The conditions of the agreement between the employer and the agent give either party the right to terminate the engagement by giving one month's notice, and it is expected that this length of notice will be given by any person wishing to return a boy to the Home, or to transfer him to any other person before the agreement has expired. The agent further reserves the right, in case of necessity, to remove the boy summarily and without notice, although such action would only be resorted to under exceptional circumstances.

Applications should be made on the form provided for that purpose, and certified by the applicant's minister or by a local magistrate. No application can be entertained that is not accompanied by such certificate.

A fee of three dollars is charged to all persons taking boys and must be received by the agent before a boy is sent. To save delay, a remittance of this amount should accompany the application.

Among the forms used might be mentioned an application blank; agreement; for visitors to report to Canadian superintendent; for superintendent to report to the English office; boarding-out agreement, and pamphlet of information given to each lad when going off to a situation.

Girl's Branch, Peterborough.

Dr. Barnardo's Receiving Home for Girls is located at Peterboro', on premises admirably adapted for work of this character. The building known as "Hazelbrae" was presented to Dr. Barnardo by Mr. Geo. A. Cox when that gentleman changed his residence from Peterboro' to Toronto. It is a large and substantially built residence, occupying an eminence on the north side of the town and surrounded by trees and shrubbery. A school-room, dormitory, etc., has been added to meet the requirements of the work. Since Dr. Barnardo entered upon the Canadian department 1,536 girls have been placed in homes in Ontario, and the authorities claim that the great majority of these have done well and are good citizens of the Province. From the 1st of January, 1896, to October 30th, 1897, the number of girls brought to Ontario was 301—the ages running from six to seventeen years. I have visited this Home and have also deputed Mrs. Harvie to make some enquiries as to the character and extent of the work and methods adopted in carrying it on. There was in this Home on September 30th, 1897, twenty-six children who had been brought out some two month before and had not yet been placed. There were two invalid children—one a consumptive and the other a case of multiple neuritis. On October 3rd, a party of 106 girls arrived, making a total of 132. Homes are rapidly found for these children and in a short time after the arrival of a party the number in the Home is reduced to about twenty five. A school is maintained with a duly qualified teacher, and while awaiting homes the education and general training of the children goes on.

The staff of the Home consists of a lady superintendent, secretary, assistant secretary school teacher, two children's visitors, a cook, a laundress, a sewing woman (occasionally) and two house servants—usually two of the older girls. While the domestic economy of the establishment is maintained in admirable order, the department in which the people of Ontario would be most interested is the office, where the welfare and success or failure of the large family of girls scattered over the country, is recorded. It was pleasing to notice that a great deal of attention had been given to the work of supervision, especially to the personal visitation of the girls in their foster-homes. All the indications were that the children are not forgotten when they leave the walls of the Receiving Home. Two lady visitors are constantly on the road visiting girls, giving them words of kindly advice and encouragement, and taking their part when they appear to be unjustly treated. Every child is visited at least once each year, and in cases of emergency two or three visits have been paid to one child. Of course there are children occasionally overlooked, but the general rule of visitation seems to have been faithfully carried out. This is in accordance with the expressed desire of Dr. Barnardo, that the children should be well looked after until they are fully capable of directing their own affairs. Full entries are made concerning each child and duplicate copies of every report has to be forwarded to London.

While the entries in the books show that a number of children have been returned, this is not always an indication that they are bad children, for often a child who is troublesome in one home will do better in another, and there is always a period in every child's life when the greatest patience and forbearance has to be exercised—qualities which parties wanting young servants or household help are not always willing to exercise. The printed forms and circulars are numerous and methodical and give a good idea of the work of this institution and the motives and aims of those having it in charge. Nearly all the girls receive wages, commencing at two dollars per month and continuing up to the usual rate of remuneration paid to general servants. Where the girls are considered too young to handle their own wages their mistress is expected to open a bank account in which all surplus money, after payment for clothing, is to be deposited. The receipts for expenditures and the bank book has to be sent to the Home once every three months. In such cases the balance of the money is sent direct to the Home and entered to the girls' credit there.

The outfit given to each girl when she leaves the Receiving Home is made in England, and is very complete, consisting of two print and two stuff dresses, a pair of boots and a pair of slippers, four pairs of stockings, two flannel skirts, six pocket handkerchiefs, a change of underclothing and one good jacket.

DR. STEPHENSON'S HOME, HAMILTON.

A distributing home for children from Rev. Dr Stephenson's orphanages in England has been in operation at Hamilton for the past twenty-five years. This Home is located on Main street east, just outside the city limits, and is a large well-equipped building surrounded by over seven acres of fruit and garden land. Since the inception of this work in 1872 1,065 boys and 406 girls, making a total of 1,471, have been brought over from England and placed out in this Province. The number of children under eighteen years of age at the time of writing is 218 In order that some idea may be obtained of the class of children dealt with the following particulars of the English work might be given :

The mission of Dr. Stephenson's Homes is to rescue children who, through death or extreme poverty of their parents, are in danger of falling into criminal ways. The Home receives children from all parts of the United Kingdom of any age or any sex. The work is undenominational; and although officially connected with the Wesleyan

Methodist Church receives children from all evangelical churches who might otherwise have to go to the workhouse. It is conducted on the Family System, children living together in separate houses under the care of two ladies; and is supported by voluntary contributions. The work consists of seven Homes or Branches under the personal management of the Rev. Dr. Stephenson.

The Chief Office is on Bonner Road, London, N.E England. Boys are here taught Printing, Carpentry, Engineering, Plumbing. Girls are taught Dressmaking and Housework and trained for domestic service.

The Moorland Farm, Edgworth, near Bolton, Lancashire. This is a farm of nearly 200 acres on which are kept over fifty head of cattle. Boys are taught agricultural pursuits, ditching, roadmaking, quarring, baking, etc, and even the young ones help in haymaking time. Girls are taught knitting, laundry work, housework, and some are engaged in the Model Dairy, the erection of which cost £3,000, being considered one of the finest in the North of England.

Milton Branch, Gravesend, Kent, is a farm of thirty acres of pasture land and fruit; tailoring, shoemaking, carpentry, gardening and farming are taught to about 150 boys who reside here. There are thirty head of cattle and the milk supply is daily distributed in Gravesend, a town with a population of 31,283.

Princess Alice Orphanage, New Oscott, Birmingham, Warwickshire. Forty acres, farming and gardening being taught the boys, and housework the girls. Every child of this Home is an orphan and a condition of admission is that the parents when living were members of some Christian church.

Sea Side Branch, in Ramsey, Isle of Man Two or three acres on the sea coast. It is used for young children and such as may be delicate.

Infants and Convalescent Branch, Alverstoke, near Gosport, Hampshire. There are five acres of garden and fruit land Little children remain here a few years, and when old enough are transferred to other branches.

Children are selected for emigration from these Branch Homes in England and meet at Liverpool. Only such children are sent to Canada whose character and conduct while in the Homes lead the Directors to believe that they are likely to do well.

The average number of new arrivals at the Hamilton branch has been sixty boys and girls for the past five years. Places are rapidly found for the children, and at the date of my visit only two were in the home. The boys arrive in March or April, the girls in the summer or fall. The majority of the children are placed in the district between Toronto and Niagara Falls. The staff consists of Mr. Frank Hills, superintendent, and Mrs. Hills, matron, an assistant matron and teacher, a stenographer, a visitor, a farm instructor and his wife. Each child is provided with two complete outfits of clothing, valued at $30, and foster parents or employers are required to replace each article as it becomes worn out Where wages are paid the employer is allowed to make purchases for the child, the balance being sent to the Home, with an itemized account. A savings account is opened for each child and the total paid over on demand when the boy or girl becomes eighteen years of age. It has been the rule to visit each child once every year, though some children are seen more frequently. The estimated cost of this branch of the work is placed at $95 per child. If from any cause, such as waywardness or sickness, the employer desires to return the child, he is received back into the Home and maintained until otherwise provided for. Children are frequently changed from one home to another, but this cannot be regarded as an evidence of unfitness, as the engagements are usually for one year, and the management believe in making changes if better terms or kinder treatment can be secured thereby. From my conversations with him I am satisfied that Mr. Hills will look closely after the children sent to his care, and that so far as it can possibly be avoided, no children from this agency will be allowed to become a burden to the Province.

The forms used by this Home have been carefully drawn up and aim it securing for the child the best possible kind of home and treatment.

MARCHMONT HOME, BELLEVILLE.

This is one of the oldest distributing homes for British children in Canada, having been opened in 1870 by Miss Macpherson and Miss Ellen Bilbrough (the latter continuing, with her husband, Rev. Robert Wallace, to take an active interest in the management of the work). Since the inauguration of the movement twenty-seven years ago a continuous stream of British children, numbering altogether over six thousand, have made Belleville their temporary resting place on their way to foster homes and situations in this Province, and the work has been maintained throughout its history as a volunteer Christian mission. Marchmont is not the property of any distinctive British organization, but is carried on by Mr. and Mrs. Wallace for the benefit of a number of philanthropic societies, the expense being contributed to by the societies according to the number of children sent. A feature of this home is the careful records of each child that have been preserved since the first party arrived, it being possible to trace hundreds of children from the day of their arrival, over twenty years ago, to the present time. Many of these first children, now grown to manhood and womanhood, are married and comfortably settled, and are to be found in almost every rank, profession and industry, with the large proportion, however, engaged in agriculture. One, who as a lad passed through the home, is now a successful missionary in China and is maintained by the free-will offerings of his companions and youthful successors. It is much easier to trace those who have done well than those who have turned out badly, since the latter wander away and are lost sight of, but the earnest contention of Mr. and Mrs. Wallace is that the proportion of those who have utterly failed is a remarkably small percentage in the total number of those assisted. Sometimes the lad who is hardest to manage and who frequently changes his situation settles down ultimately to steadiness and industry, so that to judge of results it may be necessary to take the whole career into consideration. A good name is a valuable asset and it is fair to say that in my frequent visits to Belleville I have invariably heard the Marchmont Home and its work spoken of in terms of the highest respect, and surely if in all these years poor work was being carried on extensively the matter would have attracted the attention and adverse comment of leading citizens!

The Marchmont Home is a large comfortable residence, with ample play ground and garden attached, and additional rooms and buildings have been added as the work demanded. It is about half a mile from the centre of the city, and is now so well known throughout the county that every market day sees a string of vehicles at the door, either enquiring for children or reporting the progress of a boy or girl already received. Each party is disposed of almost immediately after arrival, and Mr. Wallace states that the demand for children is constantly in excess of the supply. From 200 to 250 children have been received each year of both sexes and from three years old up to fifteen. The boys arrive from England early in April, girls and little ones in May and June. From 100 to 150 come from the Manchester Boys' and Girls' Refuges, twenty to twenty-five from the Canadian Emigration Home, Bristol, twenty to twenty-five from the Saltcoats Orphanage on the west coast of Scotland, and small parties from the Kensington and Chelsea Unions, specially selected by Mr. Wallace. Reports showing the progress of the children are furnished from year to year to the society interested, and occasionally a visitor from the Old Country makes a special trip of inspection to renew former acquaintanceships with the children.

Mr. L. K. Shaw, of Manchester, England, Hon. Secretary of the Boys' and Girls' Refuges, visited Canada this summer and expressed a good deal of concern as to the effect of recent legislation on the future of child-emigration. The question was discussed with him from a Canadian standpoint and the fact pointed out that this Act among other provisions sought to afford protection to the children from neglect and ill-usage. This

aspect of the question, it is hoped, will be fully appreciated by Mr. Shaw and other well-known workers for children in Britain, who were at first disposed to pass unqualified condemnation of the measure

Rev. Mr. Wallace has not yet decided to continue this work, as his decision will depend largely on the attitude of those societies in England and Scotland who have been co-operating with him in the past.

From the year 1870 to the present the total number of children received and placed in Ontario homes—through the Marchmont Home—was 6,611, of which number 4,453 were boys and 2,158 were girls. Since January 1st, 1896, the number received was 185 boys and 118 girls, a total of 303 children.

Rev. Mr. Wallace has been identified with the work for fifteen years, while Mrs. Wallace has been associated with it for twenty-eight years. They devote all their time to it and do not receive salary. They are assisted by the following officers:—a secretary, visitor, assistant, visitor, housekeeper, and the usual household help. The majority of the children are located east of Toronto.

The home does not receive the earnings of the children as experience indicated that it was better in the long run for the children to handle their own money and thus learn how to spend it properly. This plan also removes any danger of the child thinking that the Home is anxious to collect and keep his wages.

MISS MacPHERSON'S WORK, STRATFORD.

Miss MacPherson, whose Distributing Home for English children is located at Stratford, is probably the pioneer in the work of finding homes for English children in Canada. She brought a party of children to this country in 1869, and has annually emigrated one or two parties from that time to the present Including adults, it is said that she has helped 6,300 persons to a new start in this country. The first Distributing Home was opened by Miss MacPherson in Belleville, in 1870, and this branch is now carried on by Rev. Robert Wallace. The second distributing centre, at Knowlton, Quebec, which is now carried on by Mrs. Birt, and the third Home, opened at Galt in 1871 by Miss McPherson, was transferred to Stratford in 1883, where the work has been carried on up to the present time. The children brought to Canada under Miss McPherson's auspices come from London. There are two Institutions there, namely, the Home of Industry, 29 Bethnal Green Road, London, England, and the Training Home, Tower st., London Fields, London, Eng. During the past fourteen years the number of children received each year at the Stratford Home averaged 176 boys and girls, and of all ages up to fifteen years. The total number brought out under Miss McPherson's management since 1872 is 2,608 boys and 1,289 girls, a total of 3,897 children. Since January 1st, 1896, 171 boys and 74 girls have been brought out

The Receiving Home is a large and comfortable building, affording every facility for carrying on the work to the best advantage. Mr. W. H. Merry is the manager of the Canadian work, and he is assisted by a visitor and a young lady teacher, who is also an assistant visitor. Careful records are kept of the movements of the children, and Mr. Merry appears to be thoroughly anxious to look well after his charges. He states that it has always been the policy of Miss MacPherson to personally visit each child yearly and to care for them at all times in trouble and sickness In cases where mistakes have been made as to the child's character, the Home has returned such children to England, and he believes there are very few cases of this kind where the children have been any

expense to Canada. A notable feature of this work has been the number of brothers and sisters who have been brought out. One child coming in advance has often been the means of five or six of the same family following. While it would be impossible to say just what proportion of these children have turned out well, in the absence of evidence to the contrary it is fair to assume that a reasonable proportion, at least, have grown up to worthily discharge the duties and responsibilities of citizenship.

Homes are found for these children in Western Ontario, and the majority are located in Perth, Wellington, Waterloo and Oxford counties. Mr. Merry is prepared to receive a child into the Home at any time, and investigate any complaint of ill-treatment, overwork, etc. With increased care in selection and closer supervision in their new homes, it is likely that good results will follow the work of this agency.

MR. QUARRIER'S HOME, BROCKVILLE.

Mr. William Quarrier, whose childrens' village at Bridge-of-Weir, Scotland, is well known throughout the civilized world, entered upon the work of child immigration shortly after Miss Macpherson, over twenty-five years ago. His children were at first placed out from the Belleville home, but in 1888 he purchased a large residential building in Brockville and opened the Fairknowe distributing home for Scottish children. Since that time 2,500 children, an average of 250 boys and girls annually, have been brought to Ontario, or a total from 1870 of 4,732 children. I have visited this home and have discussed the work with Mr. James Burges, the resident agent. The supervision of the children has been well attended to so far as I could judge, and the class of children brought from Scotland are of a most desirable class. Mr. Quarrier visited Ontario last August and had interviews with the Premier, Hon. A S. Hardy, and myself, in which he expressed strong dissatisfaction with the Act which had been adopted. As Mr. Quarrier subsequently sent an article defining his position to *The Globe* it would perhaps be better to reprint the article here:

CHILD IMMIGRATION.

Mr. William Quarrier Defines His Position.

To the Editor of the Globe:

Sir,—On March 31st of this year there was put on the statute books of Canada, a law for regulating the immigration into Ontario of certain classes of children which is anti-British in its enactments and alien in its character. It lays hold on a voluntary Christian work supported by British money and puts it under the control of a Government which does not contribute one cent toward its keep. It prohibits any philanthropic individual or society from bringing into Ontario a child under eighteen years of age without a license from the Government, while at the same time any immigrant—criminal or otherwise—may enter the country with his children. Is this Canadian fair play in dealing with its subjects? It gives to societies bringing out children power to control them until eighteen years of age, when any other British child of fourteen can choose its own place of residence without the control of parent or guardian. This part of the new Act is entirely at variance with British and Canadian law, and there are other clauses equally so. Without condemning the author of the bill or the parliament that made it law, I say without fear of contradiction that it was hastily enacted, and is the most inquisitorial law that was ever put on the statute books of a British colony.

Twenty-seven years ago Miss Annie McPherson, of London, England, brought the first party of children into Canada. I followed a year later, and Mrs Birt, of Liverpool, joined us soon after. Miss McPherson established three homes, at Galt, Belleville and Knowlton, for the reception of children on their arrival, and as centres for placing them out. She retained the Galt home for London children, gave the one at Knowlton to Mrs. Birt and set apart the Belleville home for Scotch children. Ten years ago we opened the Fairknowe Home, Brockville, for placing out the children from the orphan homes of Scotland, leaving Marchmont Home, Belleville, to Mr. and Mrs. Wallace. In twenty-seven years

we, who were the pioneers of the movement, have brought into Canada about 5,000 children and young people, whom we have trained and tested, and the results show that not two per cent. have ever become criminal or chargeable to any municipality, and the annual death rate is only four per 1,000. Many of them are now heads of families, some are teachers, ministers, missionaries, servants, etc., and we know of no other agency that has accomplished more lasting good. We have ever held ourselves responsible for every one we brought out, and where failure has come we have returned them to the Old Land. We have spent hundreds of thousands of dollars in conducting this work and have never asked the Government at home or here to help us financially. It has been carried on in dependence on God and is a purely voluntary and religious movement. We hold tenaciously that the Government has no right to interfere with religious work which it does not support, and that before framing this law, we, who have spent our money, time and energies in furthering the land to which we have brought our children should have been consulted. Instead of that, this new stringent law was passed before we were made aware that such a measure was thought of. We feel that we have been unjustly treated, and that an unmerited stigma has been put upon our work. After my arrival here in June I put myself in communication with the Premier of Ontario to see if the law could be amended in such a way as not to interfere with our principles as voluntary Christian workers, but so far there seems to be no other course open but to refrain from bringing out children until the law is amended.

The following correspondence will show the position we have taken up, and I trust the friends of Christian work and the churches of Canada will see that the voluntary work which has blessed many Canadian homes and many a Scotch child is not hindred :—

Brockville, 19th July, 1897.

"The Honorable A. S. Hardy,

Premier of Ontario"

Sir,—I wrote you in regard to the matter about which I had an interview with you and your colleagues on July 6th. Having arranged to go home early in August I wish to have a statement to lay before the public in Scotland regarding the conditions on which we may bring out Scotch children for settlement in Ontario. I am not prepared to accept a "license" under the terms on the new Act, which I consider interferes in an unfair way with a desirable class of immigrants. Is it not possible for your Government by an Order in-Council to delay the carrying out of the Act in September and have it remodelled in such a way as not to place unnecessary burdens of voluntary work such as ours, which has conferred such benefits on the country. In the past twenty-six years we have placed out about 4,800 children and young people, not one of whom, as far as we know, is chargeable on the rates of any community. We have spent hundreds of thousands of dollars for immigration work in this country, and it seems to me we deserved to be taken into consideration in the drawing up of the Act. I will submit to the strictest examination before embarkation, and will give a written guarantee for every child we bring out that it will not be allowed to become chargeable to any municipality; and I think this would meet the whole case, and such a course would show that our twenty-six years' labors for the good of this country have not been forgotten by the Government.

I have the honor to be, Sir,

Yours faithfully,

"(Signed) WM. QUARRIER."

Department of Attorney-General,

Toronto, July 22nd, 1897.

Wm. Quarrier, Esq.,

Scottish Home for Children,

Brockville, Ont.

"Dear Sir,—In adopting the Act regulating the immigration of children, the Legislature of the Province had no desire or intention of unduly hampering a good work such as yours. The Scotch are well known as a most desirable class of settlers, and from all we have heard of your good work, both in Scotland and this country, we have confidence that you would only bring the best class of children into Ontario, even though no law existed on the subject. But with so many agencies engaged in the placing of British children in Ontario, it was felt to be imperative that some regulations should be adopted whereby careless or mere money-making work could be put a stop to. As you doubtless know, there is a strong public prejudice against the importation of children, owing partly to the work of placing and supervising not having been properly

attended to by some of the agencies. This, it is hoped, will be remedied to some extent under the new law. As you can readily comprehend on a little reflection, it would be absolutely impossible to discriminate in law between one agency and another. But so far as it can be done by departmental regulations, every consideration will be shown to your Brockville home and agents. There is no provision whereby the application for Government recognition could be avoided, and this need not be considered in any sense derogatory to the great benevolent and Christian work in which you are engaged. Mr. Kelso who will have the direction of this department, will always be prepared to co-operate with your representatives, and his object is the same as yours, viz., the protection of these children from cruelty and neglect. While there is no provision under which special exemption could be granted to your work, I would urge you in the general interests of this movement to comply, even at personal sacrifice, with the terms of the Act, and thus aid, not only in the full protection of the children, but in assuring the Canadian public that every precaution is being taken to guard against the moral or physical deterioration of our people.

I am, dear sir,

Yours very truly,

(Signed) ARTHUR S. HARDY.

The above letter from the Premier shows clearly that there are no charges made against our individual work, and our withdrawal for the present is intended as the strongest protest against the framing of such an Act to gratify the clamor of certain individuals.

We do not claim to have brought angels into the country, nor do we place them amongst angels, but we do assert that the thousands brought here will bear favorable comparison with any number or class of Canadian-born, in physical, moral, mental and spiritual power.

Brockville, July 31.

WM. QUARRIER.

No intimation has since been received from Mr. Quarrier of any change in his position, but it is likely that when he understands the spirit in which this supervision is entered upon he will withdraw any objections and continue his work.

Children brought from "The Orphan Homes of Scotland; Bridge of Weir to Fairknowe, Brockville, Ont, 1888 to 1897.

Year.	Boys.	Girls.	Totals.
1888	133	107	240
1889	148	104	252
1890	143	106	249
1891	133	99	232
1892	140	109	249
1893	150	118	268
1894	156	101	257
1895	152	110	262
1896	132	124	256
1897	124	111	235
	1,411	1,089	2,500

From 1872 to 1887 inclusive there were sent to Galt and Belleville Homes 2,232 children, making a total of 4,732 children sent out by Mr. Quarrier.

SOUTHWARK CATHOLIC EMIGRATION SOCIETY.

This organization was formed under the presidency of the Bishop of Southwark, London, England, for the purpose of placing out in Canada, Roman Catholic boys under sixteen from the various orphanages of the diocese The work is carried on under the supervision of Rev. Edward St. John and Rev. Lord Archibald Douglas, of St. George's Cathedral, Southwark. A beginning was made by the latter gentleman in 1882, and at various times a number of lads were placed in Quebec, but the scarcity of farm homes among English-speaking people in that Province led to the transfer of the boys' branch to Ontario. Two years ago a comfortable residence in Hintonburgh, a suburb of Ottawa, was purchased as the Society's Ontario Distributing Home. This building has been named "New Orpington Lodge," after one of the English institutions, and Mr. George Croxford has been installed as the resident agent. The first party arrived on April 29, 1896, and consisted of thirty boys from eleven to fifteen years of age. Second party, July, 1896; thirty boys. Third party, June, 1897, twenty-five boys, and the fourth party in August, 1896, twenty-five boys, and these, with forty-five boys brought out before the Home was opened, make a total of about 130 under Mr. Croxford's supervision. This Society has an extensive farm in the Northwest, Mackinac post office, Lake Dauphin district, to which they expect to send a party of thirty lads next summer.

When visiting Canada in August last Rev. Edward St. John called at my office to explain the work of the Society. He stated that they agreed with the general provisions of the new law, as it was their rule to select only strong healthy lads, and they were providing machinery for looking after the lads' interests until they were fully established for themselves.

Later I paid a visit to the receiving home at Hintonburgh and discussed the details of the work with Mr. Croxford. The Home appears to be well adapted for a distributing centre, as nearly all the boys are located in the Ottawa district, and it is the intention to concentrate the placing out in Eastern Ontario. The books are not yet in good order, but they are being revised and will be made satisfactory in the near future. Mr. Croxford is interested in his work and anxious to maintain a careful supervision of the lads under his charge. No difficulty has been experienced in providing situations, as the parish priests and others lend assistance in this direction. While a number have been changed and one boy ran away and has been lost track of, the great majority remain in their first situation, and Mr. Croxford states that from his visits he believes they are doing well.

The following admirable set of rules have been drawn up and a printed copy is supplied to every applicant on the same form as the application which is signed. They might well be taken as a model by all who are engaged in the work :

Conditions on which Boys are Placed.

Memorandum of agreement under which the Southwark Catholic Emigration Society places out boys under sixteen :

Applicants for boys should carefully read the conditions (which are sent in duplicate), and sign the statement at the end, adding their postal address. The signature of the Parish Priest must also be obtained to the declaration returned to us, and the applicant should carefully preserve the duplicate.

1.—On receiving a boy, the person receiving him is requested at once to sign the form the boy brings acknowledging his safe arrival, and either hand it to our agent, if he is present, or post it immediately to him, together with the boy's railway or stage fare *from Ottawa*. Should one of the secretaries bring the boy, it should be handed to him.

2.—In placing our boys, we reserve to ourselves their guardianship till they are eighteen years of age (after which it must depend upon themselves how far they will avail themselves of our good offices). Up to eighteen we reserve to ourselves the right to remove them at any time without notice, and our agent has full power to exercise this right.

NOTE.—While reserving this right we have very seldom exercised it, and those taking boys may rest assured that we much prefer their remaining with the same people, and that as a matter of fact they do so.

3.—We place our boys under this agreement only with married Catholic farmers, and would like them, if possible, to have a place in their pew in church.

4.—If a boy does not suit the person we placed him with, he can be returned to our agent at our receiving Home, New Orpington Lodge, Richmond Road, Ottawa, but ten days' clear notice must, unless the agent dispense with it, be sent to him.

It is understood that on no account is a boy to be given over to any other person without our written permission, or that of our agent, or that of the Parish Priest: nor may a farmer leaving the parish, province, or Dominion, take away the boy without such written permission.

If a boy should run away, the person to whom we entrusted him should at once inform the agent, and, if possible, give the boy's new address.

Our agent should also be acquainted at once in the event of *serious* sickness, or of death.

5.—All boys over seven (and if the Parish Priest desires it, earlier) should be taken with the family regularly to Mass, and should attend for religious instruction when and where the Parish Priest shall direct.

6.—All boys over seven, and until exempted by the Canadian School Law, should attend school one full session yearly.

7.—All boys should be treated as one of the family, and besides lodging, boarding, washing and mending, should *when not receiving wages* receive also *suitable* clothing.

They come with an outfit, but as this wears out, or becomes unsuitable in consequence of change of climate, other *new* clothing is to be provided.

They require decent Sunday and weekday clothing, outer and under, *suitable for summer*, and other things for Sunday and weekday *suitable for winter*.

These things once given become their own property, and in event of their being removed by us, or their being sent back to our agent, should come along with them.

8.—Every boy should have a bed to himself.

9.—Boys should only be employed in work suitable to their age, *size* and strength.

NOTE.—A hired man should not, when needed, be dispensed with, and a boy between fourteen and sixteen put in his place to do his work.

10.—Boys of sixteen years of age, who have been at least since fifteen (one clear year) at work on a farm, should receive wages, the amount of which must depend upon the boy's value, and work he is expected to do, etc. Such boys find their own clothes, and this arrangement must be the subject of a written agreement between the farmer and himself, one of the secretaries, or our agent being the witness. Forms for such agreement supplied by the agent.

This regulation, however, does not so bind a boy that he cannot if he wish, and with perhaps our advice, go on as before, when there is special reason for so doing, and it is to the boy's advantage.

11.—Farmers will not take or send boys to the shanties, till at least the season succeeding their sixteenth birthday: seventeen or eighteen is in our opinion early enough so to employ boys.

12.—We desire that boys write to us once a year at least, and to their nearer relations a reasonable number of times (four times a year would not be out of the way if the boy wishes it).

We would express the wish that boys should be left to write their own letters, and that what they are to say, should *never* be dictated to them. Those with whom we place boys are asked to kindly provide stamps (five cents to England) and paper for this number of letters each year, and to make sure the boys get the mail that comes for them.

13.—We cannot always give a boy exactly the age the applicant desires. The applicant who is not very particular as to exact age, should leave in the word "about" in the application. But if he will not have any boy at all under the age, he must strike out the word "about."

14.—One of the secretaries or the agent will visit each boy at least once a year, see and converse both with him and those he is with, and make a report, etc.

The boys sent by us to Canada are possessed, more or less, of ordinary boyish faults and ailings—impossibilities in the way of perfection must not be expected. We take however all

the care we can, not to send "bad" boys. We pick the boys who are to come from among others in our institutions whom we have known some years, and in whom we have most confidence that they will do well. We make it a reward and a favor to be brought out, and we avoid shipping off boys we can do "nothing with," or who we wish to "get rid of." We do not send Reformatory boys, or "Waifs and Strays."

Further, each boy sent to Canada is sound in health and limb, and has been medically examined and pronounced healthy before being placed on our list.

If there should be any case of error on our part, rule 4 safeguards the person we place the boy with, and enables him to return the boy on our hands.

If a boy is sent back on the ground of health, a medical certificate is expected.

MISS RYE'S HOME, NIAGARA-ON-THE-LAKE.

There is a Receiving Home for English children at Niagara-on-the-Lake, known as "Our Western Home," which was established by Miss M. S. Rye nearly twenty-five years ago, and has been carried on by her continuously until last year, when the work was transferred to the "Waifs and Strays" Society of London, Eng. This Home is located in the outskirts of the town in the centre of a splendid fruit district. The building was formerly used as a court house and has been remodelled to afford the necessary accommodation for children's work. In addition to the main building there is a smaller building a short way off where the girls who return from situations are placed in order to keep them apart from those newly arrived from England. During the first year or two both boys and girls were brought out by Miss Rye, but for over twenty years now the work has been confined to girls. Altogether there have been about 4,200 girls brought to this Home from England and placed out in Ontario. During the past year only a small number of children were received owing to a change in the management.

On my visit to this Home I was met by the superintendent, Miss E. Bayley, who kindly explained the system and methods in vogue and placed all the books before me The staff consists of a superintendent, a school-teacher, a cook, a laundress and a sewing woman. As a result of my enquiries it appeared quite evident that the work had not been properly handled in the past and that some radical change would be necessary before it could be considered satisfactory from a Canadian standpoint. The arrangements—if there could be said to be any arrangements—for the supervision of the children after going to foster-homes and situations were far from adequate. Miss Rye, during the long period in which she was engaged in this work, did not make any effort to have the children personally visited after leaving her care, and she is credited with the statement that the other homes were going to an unnecessary expense in maintaining a staff of visitors. The agreement in use did not seem to be sufficient to fully protect the children, and altogether the work gave evidence of poor management in the past. No formal agreement had been entered into between the Home and those receiving the children beyond signing the application form; no personal visitations were made after the child left the Shelter, and the correspondence between the child and the Home has always been of the most meagre character. The consequent danger is that the child soon realizes the lack of interest that is manifested in its welfare and the foster-parents see that they are not likely to be interfered with if they overwork and otherwise take advantage of their young charges. These four thousand children have gone to all parts of Ontario, but probably a large proportion find homes in the Niagara district.

Without going into details concerning past defects, it is only fair to say, in justice to other agencies, that I consider this home responsible for a good deal of the odium that now attaches to child immigration in this country.

This agency has been transferred to the Church of England Society for Providing Homes for Waifs and Strays, and their attention has been called to the necessity of considerable improvement before the work can meet with the approval of this Province.

FEGAN DISTRIBUTING HOME, TORONTO.

Mr. J. W. C. Fegan, of London, England, has a Distributing Home for English boys at 295 George street, Toronto, from which about one hundred lads have been apprenticed out each year since 1884 Mr. Fegan has been engaged for the past twenty-five years in work for the rescue of destitute and vagrant boys, and superintends three institutions in and about London. The principal institution is The Boys' Home, Southwark, situated at 95 Southwark street, a broad thoroughfare which runs parallel to the Thames from London Bridge to Blackfriars' Bridge on the Surrey side. Here 125 to 150 boys are maintained, who have been gathered in from various conditions of destitution, and who range in years from eleven to seventeen years old. The second institution is the Little Wanderer's Home, Greenwich Road, the high road which connects Deptford and Greenwich. About sixty-five boys from six to twelve years old are provided for here. The third institution is The Boys' Orphanage, Ramsgate, where fifty boys from six to twelve years of age are in training.

The beginning of the Canadian work is thus described by Mr. Fegan in one of his pamphlets:

"In the spring of 1884 I crossed the Atlantic, on a visit to Canada, partly for the sake of my health, partly to investigate for myself the *pros* and *cons* of juvenile emigration work, taking with me a small experimental party of eleven boys. After travelling a little in Quebec and Ontario, I pushed right on to the Rocky Mountains—beyond the point to which the Canadian Pacific Railway was then constructed. I returned, and in the same summer crossed again with about fifty boys, most of whom I took up to the North-West—the first party of rescued street arabs taken into Manitoba. Up to this point I had not any real centre of operations in Canada, or any influential persons over there to help me, but some Christian friends kindly undertook to act for me in any case of need, and to exercise a kindly supervision over our boys in their new homes till we could organize the work.

"Towards the close of my second visit in 1884, I met my ever-revered friend, the late William Gooderham, who welcomed me with my 100 boys the next year as his guests. With that party I took out a helper whom I could leave as our accredited representative in Canada, to become resident Superintendent in our Distributing Home. Year by year since then we have sent out a party of about 100 boys each spring. In addition to the Superintendent and his wife (who acts as Matron, &c.) we have out there a clerk for attending to correspondence, boys' accounts, &c., as well as the necessary book-keeping connected with the Institution, and another helper who devotes all his time to long rounds of visitation amongst the boys, often driving 1,200 miles on a single circuit."

Referring to the Toronto building, Mr. Fegan says:

"The Distributing Home, Toronto, is a building purchased and temporarily adapted for our purpose by a princely man, the late William Gooderham, of that city. As our parties are only housed there for about three or four days while they rest after their long voyage (2,500 miles) and tedious railway journey (about 1,200 miles), a large part of it is for the greater part of the year quite empty. But besides being a receiving depot for our emigrant parties, it affords a head-quarters office for our staff, and a home for any old boys who may be out of work for the moment, or need a hospitable roof through accident, ill health, &c.

"By his will Mr. Gooderham bequeathed us $10,000 to be expended in providing a permanent Distributing Home in Toronto, in connection with our work. Through the Act of Mortmain this bequest was unfortunately invalid, but after much patient negotiation we succeeded in persuading the executors to give effect to our generous friend's unquestioned intentions. Finally, during my visit in 1895, I was able to see important additions and improvements made, and leave behind me a building thoroughly adapted for all purposes, with large dining hall, spacious dormitories, capital sanitary arrangements, comfortable residential quarters for the Superintendent on that side, and convenient offices for the transaction of all the work connected with the oversight of the 1,400 lads already sent out and scattered over that vast Dominion."

The Distributing Home is under the charge of Mr. George Greenway, who came out from England two years ago to assume the direction of the work (a position formerly held by Mr. Brace). Mr. Greenway seems to be admirably qualfied for his position, and to be anxious to carry on the work in a manner satisfactory to the people of this Province. There are in the Home at present fourteen boys, nine to eleven years of age, who have been awaiting places for about six months, and two older lads who were out of work. They were all bright, intelligent boys, and I found on examination that they were about equal in general education to any similar group of Canadian school boys. About 1,450 boys have been brought out since the inception of the emigration work in 1884, and as many of these were well-grown lads on their arrival they have passed out of the jurisdiction of the Home authorities, leaving something like 500 on the books at present for supervision. The records were not as satisfactorily kept in the past as they might have been, but better system now prevails, and the staff is more adequate to the needs of the work. Mr. Greenway is assisted by an accountant who devotes all his time to the books, and a visitor who will in future give all his attention to visiting the boys in their situations. It is also the intention to secure a house-master, who will carry on the education of the boys while they remain in the Home awaiting places. I find that quite a number of boys were brought out who were well on in years and had only been on probation in the London Home for three, four or five months. The probationary period is too short, as a rule, and some of the lads have been too long on the streets to expect that they will settle down to the monotony of farm life.

The outfit supplied to each child on leaving the old country is a liberal one, as may be judged from the following list: Two cloth suits, one over-all suit, two suits of underclothing, three hats or caps, two pair of boots, three pair of socks or stockings, three handkerchiefs, one jersey, one overcoat, with a strong box to keep these articles in; the whole valued at a little over $25.00.

In reply to a communication addressed to Mr. Fegan urging that care should be observed not to send grown youths until fully satisfied that they were the right class, I received the following letter which I think will be no breach of confidence to give here:

The Boy's Home,
95 Southwark St., S. E.,
London, Dec. 10, 1897.

"Dear Sir.—I am obliged by your favor of the 27th November and the advice you have kindly given. I think practically we are of one mind, and the apparent divergence is due to your being under the impression that all the boys sent out by us 'have been on the streets since their youth.'

I quite agree that a boy who has been a street loafer for years ought to be quite a year under training here before he is drafted out to Canada, but there are some grown up lads who have lost both their parents whom I have felt I could safely send out after having them under my eye here for three months, as they have not got any unsettled habits, and some others, who, through bad company have drifted into loose ways for only a few weeks or months previous to coming here I have felt safe in sending after four or five months training.

I hope this explanation will help to clear your mind of any fear that I am disposed to send boys away from here prematurely.

The fact is, we are anxious that no boy should leave for employment at home or abroad under our auspices unless there is good ground to expect his continuance in well-doing. We desire that this juvenile emigration work should be carried on in strict observance of the spirit of recent legislation in your Province, which, in its sentiments and enactments, must, in my opinion, command the respect of all who have the welfare of neglected children at heart, and any expression of opinion from you throwing light upon the official interpretation of such legislation will carry in our work here and in Toronto, the weight of a precept."

Yours sincerely,
J. W. C. FEGAN.

MRS BIRTS' WORK, KNOWLTON, QUEBEC.

In response to enquiries as to the work carried on by Mrs. Birt at the Distributing Home, Knowlton, Quebec, I received the following letter which I take the liberty of including in this report, owing to the information which it contains.

THE SHELTERING HOME,
MYRTLE STREET, LIVERPOOL, ENG., NOV. 10TH, 1897.

J. J. KELSO, ESQ.,
Parliament Buildings, Toronto.

DEAR SIR,—Mrs. Birt of the Sheltering Home, Liverpool, and of the Distributing Home, Knowlton, Province Quebec, has shewn me your letter of 2nd October with reference to the emigration of English children to Ontario. I may mention that I am chairman of the Sheltering Home committee here, and that while Mrs. Birt and those associated with her manage the work, we of the committee are a consultative body to assist, guide and encourage her, and to guarantee to the public that their benevolent contributions are judiciously and economically expended.

Our honorary treasurer is a merchant of standing in our city.

As our work is entirely philanthropic being alike, (we consider) an advantage to the Old Country and a great benefit to Canada, we would naturally expect a continuance of the sympathy and encouragement which we have up till now received in Canada.

We approve of your carefulness as to the children that are sent out, and I may state that we have a preliminary medical examination of every child before admission. We emigrate none without being subjected to a thorough medical examination at the time of sailing, and getting or each child a certificate of physical soundness We recognise that we are not warranted in dumping upon your country sickly or diseased children, or such as we know to be morally bad. For this reason Mrs. Birt is compelled to refuse many children whom we might otherwise admit to our Sheltering Home here. Some after admission give evidence that they are not fit for emigration, and these children are either returned to their guardians or sent to other institutions at home.

The class of children we take are the fatherless children of sailors or labourers at the docks, many of whom are cut off by accident or exposure. Our work has been to step in at the father's death or mother's death and *prevent* the children from beginning to seek a living on the streets. Many of them are the children of worthy parents. For instance, a railway porter and his wife die within three weeks. They leave six children orphans, without a relative who can help. We interpose at this critical period. Again, the children receive good instruction while under the school board; a critical time comes when they are released from school attendance, and a widowed mother becomes unable to control them, while working herself for daily bread. Others are little girls whose fathers are out at work or at sea, and cannot get their children properly cared for during their absence.

We have always kept proper records of all cases admitted.

We believe Mrs. Birt has been most successful in her work of training and supervising these children. So far as we know not over three or four per cent. turn out to be failures.

Sometimes children are returned to Knowlton Home by the people, but generally we find more suitable places for such, and while the first employers might pronounce them to be failures the second are generally quite satisfied, and the children get on more happily. We have sent out no pauper children although we have been asked to do so.

Many of the children taken out by Mrs. Birt in former years have become successful and prosperous citizens. Some have entered the ministry of various churches, others have followed in the learned professions, a number are successful farmers, owning their own land, or tradesmen. We visit every summer as many of our emigre's as Mrs Birt and her other helpers are able to overtake, and we have the great advantage of the assistance in this visitation and supervision of several Government (Quebec) School inspectors in the districts under their charge.

We think it well, however, where our emigre's are grown up to manhood and womanhood, not to keep up continuous supervision which might be, on social grounds, distasteful to them, and unnecessary.

The particulars you desire are as follows: I take from our annual statement: During the year October, 1895, to October, 1896, 450 children applied for admission, 200 were admitted after investigation, 125 were emigrated to Province of Quebec. In 1897 up to October, 136 were emigrated.

During the two years 1896 and 1897, only six children have been placed in Ontario, and *at present we are not placing any there.* A total of forty-six under the age of eighteen are at present under supervision in Ontario. The age of children is from four to eighteen, average twelve-fourteen. Numbers about equal of each sex.

Mrs. Birt has recently returned to this country. When she comes out to Canada next spring she will be very glad to receive you at the Knowlton Home, or to come to Toronto and have an interview with you. I may mention that Hon. Geo. W. Ross, Minister of Education for Ontario, has visited our Training Home in Liverpool.

Believe me, dear sir,

Yours faithfully,

S WILLIAMSON,

Chairman of Committee.

AS VIEWED IN ENGLAND.

The following commendatory article appeared in the October, 1897, number of "Boys and Girls," an English publication edited by Rev. Lord Archibald Douglas. It gives a correct idea of the aim and need of this law:

A NEW CANADIAN LAW.

IN THE PROVINCES OF ONTARIO AND MANITOBA REGARDING THE IMMIGRATION INTO THEM OF CHILDREN "FROM THE OLD COUNTRY."

There has been a great deal of dissatisfaction in Canada at the way some societies and some individuals conducted child immigration to the country from England.

The Province of Ontario has been the first to move in the matter, the Government bringing in a bill which passed the House at Toronto, and which came into operation as law in September of this year.

Manitoba has adopted the same Act. Doubtless Quebec province and others will follow suit before long.

We gladly welcome the Act, we agree with the need there was for legislation, and after studying the Act we approve of all its provisions.

It is to provide. First for the protection of these provinces from the introduction of unsuitable children. Secondly that the children introduced must be so disposed of, and so looked after until eighteen years of age, that they can neither be ill-treated with impunity, nor be allowed to become a nuisance to the community. Thirdly to provide under severe penalties, that the society or individual immigrating the children shall bear the whole responsibility and cost of supervising the child and shall act as legal guardian up till his or her eighteenth birthday, and shall be required to submit the working of the guardianship every three months to the scrutiny of an "inspector" appointed for the purpose by the Provincial Government.

The Act requires few changes in the procedure we have already adopted. The two principal changes we have to make, are that we must submit our children for examination and approval to an "examiner," a Canadian official in London, *before* we may emigrate them for Ontario or Manitoba provinces, and further we are required to see to our boys (we already did so with our girls) up to eighteen years of age, instead of till up till sixteen.

It is a change we approve of. We had chosen sixteen, because we had found by experience that boys soon after that, expected us to let them make their own arrangements, but now that the

law of these provinces makes them practically our wards till eighteen, they will have to fall in with the provisions of the law. We advise any societies engaged in the emigration of children to these provinces to look the law up as it came into force in September as far as Ontario is concerned and several of the provisions are upheld under heavy penalties. Any influence we possess will be used towards inducing the province of Quebec to adopt the Act as Manitoba did from Ontario.

The placing out of children without continued and real supervision is a heartless and cruel proceeding. Such a thing would not be tolerated for a momentt in this country, and undoubtedly it has led in Canada to many evils known and spoken of with indignation there.

A Manchester Report.

The twenty-seventh annual report of the Manchester and Salford Boys' and Girls Refuges for the year ending December 31st, 1896, has the following reference to the recent legislation :—

"*Emigration Training Home.*—This Home, the fourth of the Strangeways group, has been busy throughout the year receiving and preparing the large family who dwell under its roof for their new homes in the West, to which ere long they will go.

"The committee feel increasingly the importance and value of this branch of their work, and would commend it very earnestly to the support of the inhabitants of this district. In no way can a boy or girl be provided for so cheaply. One single payment of £10 provides a complete outfit, and the ocean and railway journey, to Mr. and Mrs. Wallace's large and hospitable distributing Home in Belleville, Ontario, from whence they are at once placed in selected farm homes, where they are regularly visited and reported on, until their position in life is permanently assured. Thus for ten pounds there is a life provision for those who would otherwise be an annual cost and might be a source of weakness to the old country.

"The benefits of wisely conducted emigration are well summed up in a letter which appeared in the *Manchester Guardian* of March 22nd. Our attention had been called to a paragraph in the *Guardian* from the Ottawa correspondent of the *Times* respecting the 'importation of English waifs into Canada.' The proposed legislation will not affect in any way this branch of the Strangeways work. Juvenile emigration as conducted by the Committee of this institution, has always carefully guarded the very points which the Canadian Legislature calls attention to.

"'Each year the subject of emigration assumes greater importance, not only because it relieves our own congested population, but also because it opens a "door of hope" to many, who, through no fault of their own, find that door closed against them at home.

"'Need we explain again the class we emigrate? Not the idle, vagrant pauper, still less the vicious and semi-criminal; our colonies will not have such, and they are quite right. Whom, then, do we emigrate? The class is clearly defined—hopeful boys and girls, sound in body and mind, *but who would probably be dragged back by their surroundings to their former state if they remained here.* Give such children fair play, let them not be handicapped in life's race by the dead-weight of vagrant, drunken, or vicious surroundings, and we accomplish three most important things.

"'*First.*—We permanently save the children from relapsing into the misery of their former lot.

"'*Second.*—We relieve our own overcrowded population, where the struggle for existence grows fiercer every day.

"'*Third.*—We supply our own colony with her greatest need, healthy, honest labor.'

"The actual experience of over fifteen years confirms the wisdom of these principles; failure is a rare thing with those we emigrate. During these years we have placed in Canadian homes 1,000 children, the vast majority of whom have done, and are doing well, and with the majority of whom we are still in touch. The continued demand for our boys and girls in Ontario is a further proof of the success of those already sent. It is entirely misleading to call them 'English Waifs.' Whatever some of them may have been in the past, the period of careful training which they have received has changed all that. Every mail brings letters and reports, telling of the well-doing of those sent out in previous years, who, in many cases, have sent money to enable us to help others."

Views of the Archbishop of Ontario.

At the annual meeting of Dr. Barnardo's Homes, held in Queen's Hall, London, Eng, on June 2nd, 1897, the Archbishop of Ontario was present, and in the course of an address said :—

"I heard the name of Canada mentioned to-night, and as I am an archbishop from Canada, I suppose it is a compliment to Canada and not to myself that I am asked to speak to-night for

Canada has received the greater number of those young immigrants sent out by Dr. Barnardo's Homes. In Canada we appreciate those Homes. They are beginning to be very much better understood than they were at first. At first, I must say to you honestly that there was a little prejudice against them. Canada was considered by many as a sort of dumping ground for people who could not get a living in England. I saw with great satisfaction that a good answer was given to that, namely, that while the Legislatures in Canada are threatening to make laws regulating the immigration of such young people as are sent out by Dr. Barnardo's Homes, yet Dr. Barnardo is not at all afraid of it, for he states they are only giving legal sanction to what were the principles of his Homes all along. (Applause.) That is very satisfactory to me as a Canadian. I have been living in Canada for about forty-nine years, and therefore I know the feelings and tone of the people, and I am quite certain that as time goes on these Homes will be more appreciated in Canada than they have ever been."

A Sweeping Charge and an Explanation.

In the report of the Minister of Justice on the Penitentiaries of Canada, in the year 1893, the chief inspector, Mr. Jas. C. Moylan, made the following remarks on the subject of imported criminals :

"Of late years our penitentiaries have had a most undesirable class of criminals added to their number. Cockney sneak-thieves and pickpockets are numerous. These pests are gathered from the slums of St. Giles and the East End of London, and after short terms of so-called probation in certian notoriously mis-managed refuges, are periodically shipped to Canada as immigrants deserving encouragement and support. With a few exceptions these street-arabs of Whitechapel, Rotherhithe, Ratcliffe-Highway, and other haunts of vice, speedily return to their old habits on arriving in Canada, and in consequence become a burden and an expense to the taxpayers of the Dominion in reformatories, gaols and penitentiaries, where they are found to be the most troublesome and worse-conducted convicts in Canada, their evil influence for the corruption of others being potent and pernicious. The general verdict of the chaplains and other prison officials regarding these youthful imitators of Fagin and Bill Sikes is most unfavorable. They consider them dead to good influences and their reformation hopeless. In order to protect the community against the depredations of such thoroughly trained malefactors, and our youth especially against the evil effects of their example and influence, it were advisable that effectual means should be adopted to prevent mistaken philanthropists abroad and at home from aiding and encouraging the transplantation to Canada of exotics unsuited to the soil and moral atmosphere of the Dominion."

This extract was telegraphed to the London *Times* and other English papers and caused a good deal of comment in England.

The following letter asking for an explanation was addressed to Sir John Thompson by Dr. Barnardo :

"January 31st, 1893.

"Sir,—The attention of the committee of these institutions has been drawn to a telegraphic despatch dated 'Ottawa, January 24,' which appeared in the *Times*, the *Daily Telegraph*, and other organs of the English press on the 25th instant.

"I desire specially to direct your attention to the paragraph alleged to be written by the chief inspector and to be published in your annual report : 'These pests are gathered from the slums of St. Giles and the East End of London, and after short terms of so-called probation in certain notoriously mismanaged refuges, are periodically shipped to Canada as immigrants deserving encouragement and support.'

"Enquiries have been made of the managers of these institutions by members of the public with regard to these serious allegations, specifically as to whether that report refers to, or includes or is supposed to include the emigration operations of these institutions. No definite information is supplied as to what institutions are thus criticized, and it is therefore obvious that in the absence of such details grave injury and equally grave injustice may be done all institutions engaged in the work of child emigration to Canada.

"The committee and trustees of these instititutions, therefore, which have been actively engaged for many years in the work of Juvenile emigration upon very defined lines, request me to ask you to be good enough to state (1) To whom do the foregoing remarks refer? If from any cause you feel yourself unable to specifically name the institutions alluded to, will you be good enough to say if these homes are intended either directly or indirectly to be included in those which have been so characterized by the chief inspector?

"If your reply to the latter question should be in the affirmative, no doubt you will see the importance of supplying us with facts upon which the chief inspector has proceeded in formulating his strictures, so that we may have an opportunity of considering their accuracy and applicability.

Sir John Thompson replied as follows :

"Ottawa, February 20th, 1893.

"Dear Sir,—Referring to your letter of the 31st ult., I beg to enclose a Memorandum which has just been handed to me by the Inspector of Penitentiaries.

This is the enclosure referred to :

"Memorandum to the Honourable Minister of Justice, *re* letter of Thomas J. Barnardo :

"In my official capacity it came to my knowledge that during the past three or four years, a number of criminals, said to be from London, had been received in the Kingston and St. Vincent de Paul Penitentiaries ; I considered it my duty to note the fact, for your information, in my annual report. The criminals to whom I referred were adults. My allusion, therefore, to "a certain notoriously mis-managed refuge," not "refuges," as erroniously stated in Thos. J. Barnardo's copy of the telegram, could not have embraced "Dr. Barnardo's Homes," where, I have been led to suppose, only "children" are cared for.

"Not having, in any way, indicated these "Homes for Destitute Children" as the sources whence the undesirable class of criminal, spoken of in my report, have been supplied, I cannot conceive why the agent of those Homes at Toronto, and the director of them in London, should suppose that I had any intention, proximate or remote, to include, either directly or indirectly, the Barnardo Institutions in the one refuge characterized in my report.

"(Signed) Jas. G. Moylan.

Penitentiary Branch, Department of Justice,
15th February, 1893."

CONCLUSION.

It is with some hesitation that I have prepared this report, knowing, as I do so well, the strong feeling of hostility to child immigration that prevails in many sections of Ontario. Nevertheless, I have regarded it as only right to set forth the conclusions that formed themselves in my mind after reviewing this work from all standpoints. Those conclusions are, briefly, that child immigration, if carried on with care and discretion, need not be injurious to the best interests of this country. There has been some poor work in the past, and some undesirable features, but there has also been much that was good and commendable. If the present Ontario Act is faithfully observed by the various agencies, and properly administered by the officials having it in charge, many of the objections now urged should be removed. The children in their persons should be free from disease or taint of criminality, and their treatment here should be such as to surround them with every desirable safeguard, and thus ensure them becoming good citizens And if, in the administration of the Act, there should still be reasonable ground for objections, the machinery is provided whereby such objections may be removed or the work brought to an end. All I would ask is that opposition be withdrawn until the Act has been given a fair trial, and if at any time residents of the Province can speak from actual knowledge of the progress of these children, their reports and views will be given careful consideration—there is a very human tendency to report only the failures, but credit should also be given as a matter of justice to those who do well, and fill their sphere, however humble it may be, with credit to themselves and the agency that befriended them.

Respectfully submitted,

J. J. Kelso.

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(No. 61).

Account of the Official Guardian *ad litem*, for the year 1897. Presented to the Legislature 13th January, 1898. *Not printed.*

(No. 62).

Return of an Order of the House of the thirty-first day of March, 1897, for a Return shewing how many acres of land are contained in the "Farm Proper" at the Ontario Agricultural College, and how many horses, cattle, sheep and pigs were kept on the farm in the year 1896. Shewing as well, if the farm produced sufficient food or fodder to maintain the stock for the whole year. And shewing how much it cost, over and above what was raised on the farm to maintain the stock for the year. Presented to the Legislature, 13th January, 1898. Mr. *Haggerty*. *Not printed.*

(No. 63).

Return to an Order of the House of the eighth day of March, 1897, for a Return shewing the business done during each of the years 1892, 1893, 1894, 1895 and 1896 in the following Court in this Province, namely :—1 The High Court of Justice: (1) The number of writs issued out of the High Court of Justice in each of the above years; (2) The number of Records entered for trial of the said years; (3) The number of cases set down for appeal to the Divisional Courts of the High Court in each of the above years; (4) The number of cases set down for appeal to the Court of Appeal for each of the above years; (5) The number of cases appealed to the Supreme Court at Ottawa for each of the above years. 2. The County Courts: (1) The number of writs issued out of the County Courts of the Counties of the Province in each of the above years; (2) The number of Records entered for trial in the County Courts of this Province in each of the above years; (3) The number of County Court cases set down for appeal from the said County Courts to the Court of Appeal in each of the above years. 3. The Division Courts: (1) The number of writs issued in the Division Courts of this Province in each of the said years; (2) The number of cases tried in the Courts in each of the said years; (3) The number of appeals taken from the Division Courts to a higher Court in each of the above years; (4) The number of Judgments by default entered during each of the above years in the Division Courts. Presented to the Legislature, 13th January, 1898. Mr. *Marter*. *Not printed.*

REPORT

OF THE

COMMISSIONERS

UNDER ROYAL COMMISSION

DATED 12TH NOVEMBER, 1897

ON THE

QUESTIONS OF PRICES OF SCHOOL BOOKS, ROYALTIES, ETC.,

TORONTO:

WARWICK BRO'S & RUTTER, PRINTERS AND BOOKBINDERS, 68 AND 70 FRONT STREET WEST.

1898.

COPY OF AN ORDER-IN-COUNCIL APPROVED BY HIS HONOUR THE LIEUTENANT GOVERNOR, THE 12TH DAY OF NOVEMBER, A.D. 1897.

Upon consideration of the report of the Honourable the Minister of Education, dated 10th November, 1897, the Committee of Council advise that Edward Morgan, Junior Judge of the County Court of the County of York, James Bain, junior, Librarian of the Free Library of the City of Toronto, and C. Blackett Robinson, President of the Westminster Company, (Limited), of the City of Toronto, be constituted a Board of Commissioners for the purpose of ascertaining whether any reduction can be made in the price fixed by the various agreements entered into between the Minister of Education, acting on behalf of Her Majesty, and the publishers of the text books authorized for use in the Public and High Schools, at which the said text books are now sold to the public, having regard to such reasonable profits to the publishers and the trade as are warranted by ordinary business practices.

The Committee further advise that the said Commissioners be authorized to enquire with regard to the royalty paid upon all text books used in the Public and High Schools of Ontario, and to report whether in their opinion, due regard being had to the rights of the authors of the said text books, and to what extent the payment of such royalties affects the cost of the text books to the public, and whether it would be in the public interest that the Department of Education should hereafter make such arrangements with authors by the payment of a lump sum as would relieve further payment to the author by way of royalty.

And the Committee further authorize the Commissioners to make such enquiries as to the cost of text books in Ontario and elsewhere as they may consider expedient.

Certified,

J. LONSDALE CAPREOL,
Assistant Clerk of Executive Council.

THE HONOURABLE
THE MINISTER OF EDUCATION.

{Seal of the Province of Ontario.} (Sgd.) GEORGE A. KIRKPATRICK.

PROVINCE OF ONTARIO.

Victoria, by the Grace of God, of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith, etc., etc., etc.

(Sgd.) ARTHUR S. HARDY, Attorney-General. } To Edward Morgan, Junior Judge of the County Court of Our County of York, James Bain, the Younger, Librarian of the Free Library, and Christopher Blackett Robinson, President of the Westminster Publishing Company (Limited), all of Our City of Toronto, in Our County of York, and Province of Ontario, Our Commissioners in this behalf, Greeting:—

Know ye that having implicit confidence in your loyalty, learning, discretion and integrity, We of Our Special Grace and of Our Royal Will and Pleasure have thought fit to nominate and appoint, and by these presents do nominate, constitute and appoint you, the said Edward Morgan, you, the said James Bain, the Younger, and you, the said Christopher Blackett Robinson, to be a Board of Commissioners for the purpose of ascertaining whether any reduction can be made in the price fixed by the various agreements entered into between the Minister of Education of Our Province of Ontario, acting on Our behalf, and the publishers of the text books authorized for use in the Public and High Schools of Our said Province, at which the said text books are now sold to the public, having regard to such reasonable profits to the publishers and the trade as are warranted by ordinary business practices.

And We do hereby command, authorize and require you Our said Commissioners to enquire with regard to the royalty paid upon all text books used in the Public and High Schools in Our said Province of Ontario, and to report whether in your opinion, due regard being had to the rights of the authors of the said text books, and to what extent the payment of such royalties affects the cost of the text books to the public, and whether it would be to the public interest that the Department of Education of Our said Province should hereafter make such arrangements with authors by the payment of a lump sum as would relieve further payment to the authors by way of royalty.

And We do hereby further command, authorize and require you Our said Commissioners to make such enquiries as to the cost of the text books in Our Province of Ontario and elsewhere, as you Our said Commissioners may consider expedient.

In testimony whereof We have caused these Our Letters to be made Patent, and the Great Seal of Our Province of Ontario to be hereunto affixed.

Witness, the Honourable Sir George Airey Kirkpatrick, Knight Commander of Our Most Distinguished Order of St. Michael and St. George, Member of Our Privy Council for Canada, and Lieutenant-Governor of Our Province of Ontario.

At Our Government House, in Our City of Toronto, in Our said Province, this twelfth day of November, in the year of Our Lord one thousand eight hundred and ninety-seven, and in the Sixty-first year of Our Reign.

By Command,

(Signed) E. J. DAVIS,
Secretary.

REPORT OF THE COMMISSIONERS APPOINTED TO INQUIRE CONCERNING THE PRICES OF THE VARIOUS TEXT BOOKS AUTHORIZED TO BE USED IN THE PUBLIC AND HIGH SCHOOLS OF ONTARIO, AND OTHER MATTERS CONNECTED WITH SUCH TEXT BOOKS.

To His Honor, the Honorable Sir Oliver Mowat, K.C.M.G., LL.D., Q.C., Lieutenant-Governor of the Province of Ontario :—

May It Please Your Honor—

The undersigned having been appointed by Commission under the Great Seal of the Province, bearing date the twelfth day of November, in the year of Our Lord 1897, a Board of Commissioners—

(1) "For the purpose of ascertaining whether any reduction can be made in "the prices fixed by the various agreements entered into between the Minister of "Education of Our Province of Ontario acting on Our behalf, and the publishers "of the text books authorized for use in the Public and High Schools of Our said "Province at which price the said text books are now sold to the public, having "regard to such reasonable profits to the publishers and the trade, as are warranted by ordinary business practices."

(2) "To enquire with regard to the royalty paid upon all text books used in "the Public and High Schools in Our said Province of Ontario, and to report "whether, in your opinion, due regard being had to the rights of the authors of "the said text books, and to what extent the payment of such royalties affect the "cost of the text books to the public, and whether it would be in the public "interest that the Department of Education of Our said Province should hereafter "make such arrangements with authors by the payment of a lump sum as "would relieve further payment to the authors by way of royalties," and

(3) "To make such inquiries as to the cost of the text books in Our Province "of Ontario and elsewhere as you Our said Commissioners may consider expedient," beg leave to report as follows :—

We have called before us the various publishers under agreement with the Government for publication of the text books now authorized for use, and used, in the Public and High Schools of Ontario, and have examined them and such of their employees having knowledge on the matter, upon oath, touching the several items of expenditure which go to make up the cost of publication of each text book from the time it leaves the author's hands until sold to the trade for retail to the public, which items of expense include the actual original cost in the preparation for and manufacture of the letter press plates, map plates and illustration plates (this is called capital account, and the accuracy of the information afforded to us by the several publishers as to this item was verified by reference to the books of such publishers), the paper, the presswork, the binding, and the cost of handling. We also examined, upon oath, various other expert witnesses not in any way associated in business with any of the publishers, as to the

quality and value of paper used in printing such text books, and as to the reasonable cost of presswork and binding, and the proper percentage to be charged for cost of handling.

After careful examination and consideration of the evidence before us, and an examination of each text book as to its general make up and the quality of the paper used, and the character of the work done in its manufacture, and after allowing for the royalties paid on each book, and making allowance for "such reasonable profits to the publishers and the trade as are warranted by ordinary business practices," we find as to the sale price of each of the text books now used in the Public and High Schools as follows:—

The Readers now used in the Public Schools are:

First Reader, Part I	price	10cts.
First Reader, Part II	"	15 "
Second Reader	"	20 "
Third Reader	"	30 "
Fourth Reader	"	40 "
High School Reader	"	50 "

These Readers are published by Copp, Clark & Co., The Canada Publishing Company and W. J. Gage & Co. Prior to 1st July, 1896, the prices for these Readers were 10 cts., 15 cts., 25 cts, 35 cts., 45 cts., 60 cts., respectively, and were cut down to the present prices by the Minister of Education when he entered into new agreements with the publishers, which new agreements provided for better binding of First Book, Parts I. and II. A careful enquiry into the "cost of publication" of these Readers and an examination of the make up of each book and the testimony of witnesses qualified to judge as to the material and workmanship employed in the publication has satisfied us, that the Readers are of excellent and durable quality as to paper, typography, illustrations and binding, and in addition have a very attractive appearance, which is not to be overlooked in the get-up of school books, and that the retail price now charged for each book is not excessive and should not be reduced to any lower prices than that to which the Minister of Education has by the recent agreements reduced them, as the publishers and the trade generally will not at present prices realize more than a fair business profit from the sale of these books in connection with the other school books published by them.

This series of readers was adopted by the Department of Education in the year 1885 in the place of what were known as the Campbell Readers which had been in the year 1868 selected by the "Council of Public Instruction," under the direction of the late Dr. Ryerson to supersede the Irish Readers then in use, and which in the opinion of the Superintendent of Education had become unsuitable for use in Canadian schools. In making enquiry as to the cost of text books in Ontario as compared with the cost of similar books in other countries, we have deemed it desirable to enquire into the literary merits of the books and their adaptability and suitability for use in our schools, and have had the advantage of the evidence of Professor Alexander, of Toronto University; Professor Reynar, of Victoria University; Professor Clark, of Trinity University, and Chancellor Wallace, of McMaster University, and they all united in speaking in terms of high praise as to the literary quality and educational value of all the school books now in use in the Public and High Schools of Ontario, and particularly of the English, French and German grammars, the histories and arithmetics and the Ontario readers.

Professor Clark says:—

"No one would think of using the Irish readers here now. The readers at present in use are beautiful books considering the price, compared with Nelson's (the Campbell series) they are superior, the extracts are more suitable; taking the poetical selections they are better adapted to the needs of the children requiring them and are much more instructive: better adapted to literary taste and better formed as to plan."

"Don't think there is much room for improvement. Don't think it possible to get more suitable set (of Readers) and have based my information on many years of experience."

From our own examination of the Irish and American Readers and from the strong opinions expressed by the four above named prominent educationists we are satisfied that the Ontario Readers are infinitely better adapted for use in our schools than either the Irish or American series. The Irish series, though very excellent in its way, and perhaps suitable for the schools where used, is conspicuous for its very limited amount of reference to Canada, and the limited, antiquated and somewhat erroneous information given with reference to modern Canada and Canadian matters; it is also defective in not containing a proper proportion of modern and up to date literature. On the whole so far as the education of the young people of Canada is concerned this series is unsuitable, out of date, and utterly out of touch with Canadian ideas and methods of education.

While it is true that the Irish National series is sold at a lower price than the Ontario Readers yet when we consider the difference in literary quality, of suitability to the requirements of our Canadian schools and of the workmanship, which in the Irish series is so much inferior, we are forced to the conclusion that to revert to the former series would be a great step backward in our educational system. For these reasons the Ontario Reader seems to us to be actually cheaper and better fitted for the requirements of our schools. The Irish series would be dear for our Ontario schools at any price.

The American series is also good of its kind, but is "United States" from beginning to end and for this reason alone would not be adapted for use in our schools.

For all these reasons and looking at the literary, artistic and educational merit of the Ontario series of Readers and the excellence of the print and binding, we are convinced that these Readers are infinitely more adapted for use in Canadian schools than any other Readers and are furnished to the public at very reasonable prices, and that as Chancellor Wallace put it, "the public have nothing to complain of," and we are further satisfied that the publishers and the trade are not making an undue profit from the production and sale of these books.

Of the other text books in use the following are published by Messrs. Copp, Clark & Co.: —

Public School History of England and Canada.

High School History of England and Canada.

High School German Grammar.

High School German Reader.

High School Physical Science, Parts I. and II.

High School Chemistry.

High School Composition from Models.

High School History of Greece and Rome.

(*French-English Readers.*)

First Reader, Parts I. and II.

Second Reader.

Third Reader.

After allowing a reasonable profit to the publishers for the period during which these books have been in use, the capital account remains unrealized, the profit therefore is not excessive and the prices of each of these books should not be reduced.

Ahn's First German Book.

Ahn's Second German Book.

Ahn's Third German Book.

Ahn's First German Reader.

High School Beginner's Greek Book.

These books are published abroad and are controlled by Copp, Clark & Co., the sales are small and the profits correspondingly small; the profit on each book is not excessive and the price cannot be reduced.

Clement's History of the Dominion of Canada:—This book was by arrangement authorized in several of the Provinces including Ontario, and the price is the same in all the Provinces. The profit is not excessive and the price should not be reduced.

First Latin Book:—The price of this book is now $1, the average sales are fair. It was authorized in August of 1892, for five years and the price then fixed was not too large considering the amount of capital account; the capital account has now been paid off, after allowing for reasonable profit in meantime, leaving a moderate surplus. If this book is continued the price should be reduced to 75 cts. after the end of 1898.

High School Book-keeping:—The price of this book is now 65 cts. It was authorized in July, 1887, and it has taken years to wipe out the capital account, after allowing a moderate profit to the publishers, leaving a very small surplus. The price of this book is not too large considering its merits as a book, but as the capital account has been paid off in addition to yielding a profit it should as a school book be reduced to 60 cts. after the end of 1898.

As to the books published by the Canada Publishing Company, we find and report as follows:—

Public School Arithmetic.

Public School Grammar.

High School English Composition.

There is no substantial profit in the publication of these books and the capital account is still outstanding; the price cannot therefore be reduced.

Public School Drawing Course.

Public School Writing course, Vertical series No. 7.

McLellan's Elements of Algebra.

High School Drawing Course.

The profits of sale of these books have not so far, after allowing moderate profits to the publishers, been sufficient to repay the original cost capital account and has therefore been no excessive profit and the prices should not be reduced.

High School Grammar.

High School Geography.

The publishers have realized a good profit on these books which has been sufficient, after deduction for a living profit, to pay off the capital account and leave a moderate surplus; the circulation, however, of these books is small and the plates will have to be renewed; we do not, therefore, think that the profit is so large as to call for any reduction in price and this is especially the case as to the geography which is a good text-book both as to matter, maps and illustrations and general get up.

Public School Geography.—This book is now sold at 75 cents retail; it has a fairly large annual sale and has been in use since 1887; the annual profit has been sufficient to give the publishers a fair living profit and at the same time gradually pay off the capital account which is now fully paid, leaving a reasonable surplus of legitimate profit. The price may now fairly be reduced to 60 cents, if continued after the end of 1898.

Public School Writing Course:—

Vertical series: 1 to 6.

This book is now sold at seven cents; it has a very large sale; it was authorized in March of 1896, and the profits will be sufficient to repay the capital account in about four years allowing the publishers a reasonable annual living profit. We are of opinion that this book might properly be reduced to six cents after the end of 1899.

As to the books published by the Methodist Publishing Company, we find and report as follows:

Public School Physiology and Temperance.—The price of this book is too low. It is published absolutely without living profit of any kind, and but for the very large sale the publishers would suffer loss in not being able to realize the capital account.

Primary Latin Book.—This book is sold at $1; it was authorized in 1892 and has run five years, in which time the capital account has been paid besides giving the publishers a fair living profit, and it should be reduced to 75 cents at the end of the year 1898.

High School Algebra.—The capital account has not as yet been realized on this book, the profit is not excessive and the price cannot reasonably be reduced.

As to the books published by W. J. Gage & Co., we report as follows:

High School Botany, Part II.—This book was authorized in 1888 and has been in use since; the annual sales are not large: the capital account is not yet wiped out, and it is quite plain that the profit has not been and is not excessive and that the price should not be reduced.

Botanical Note Books, Parts I. and II.—These books were authorized in 1895; the price for Part I. is 50 cents, and the annual sale is not great. The price for Part II. is 60 cents, and the annual sale is very small; at the rate of

profit made on sale of these books, after allowing a moderate living profit to publishers, it will take about seven years to repay the capital account of Part I., and about twenty years to make up capital account on Part II., so it is obvious that the profit is not excessive on either book and the price should not be reduced, but might well be increased.

As to the books published by Hunter, Rose & Co., we report as follows:—

High School French Grammar.

High School Arithmetic.

Public School Euclid and Algebra.

High School French Reader.

These books were authorized in 1894 and the profit realized on the annual sales will not, as to any of the books, after allowing to publishers a reasonable annual living profit, yield sufficient to pay off the capital account for several years yet. The profit is not excessive and the price should not be reduced. The price of the Public School Euclid and Algebra is only 25 cents, and the prices of the other books are very low considering the class of book.

McKay's High School Euclid, Parts I., II. and III.—The plates for these books are imported by the publishers, and so far they have not realized sufficient profit on sales to afford a living profit and pay off the capital account. The profit is not excessive and the price cannot be reduced.

The American price is $1, as against 50 cents, the Canadian price.

Public School Writing Course.—This book is practically out of use; the publishers have never realized and are not realizing any profit, and the price cannot be reduced.

Upon the question of royalties paid to the authors of the various text books and how the payment of such royalties affects the prices of the books, and as to the desirability of payment to the authors by the Government of a lump sum for the copyrights;

We have on this branch of the matters covered by the terms of the Commission examined upon oath the several publishers of the school books now in use, and other publishers, and have also taken the evidence of the several authors, including Professors Alexander, Reynar, Clark and Wallace, and have also inquired into the mode of payment to authors now usually adopted between author and publisher, and we find and report as follows:—

The system of payment of authors by a royalty prevails almost universally in England, the United States and Canada, not only for text books but for most other literature, and this system, in our judgment, is most just to both author and publisher, as the publisher only pays the author as the book is sold and the publisher realizes on the venture, while the author gets full value for what he gives, such value being fixed by the public appreciation of his work as shewn in the sales thereof.

The payment of authors by royalty insures to the public a cheaper book than securing the copyright by payment of a lump sum; by the royalty system the publisher and the author, so far as the payment of the author is concerned, take equal chances as to the success of the venture in publishing the book, and the price of the book can be figured down to the lowest mark which will include the percentage of royalty; but if a lump sum be paid then the publisher has to look out for himself, the author takes no risk; the lump sum must be added to the capital account and interest computed on it for the number of years it will

probably take to pay off the capital account after allowing for an annual living profit on the book ; and an estimate has to be made as to probable annual sale of the book. And with all this in their minds the publishers must, at the outset at any rate, put a higher price on the book so as to ensure being paid off his capital outlay as speedily as possible out of first sales, and looking to reducing the price if the book is a success and when the capital account has been repaid ; the larger the capital account is the higher in proportion the first price of the book must be.

It may be said that in the case of text books authorized for fixed periods a certain constituency is created by the authorization and the annual sales can with reasonable certainty be estimated before the price of the book is fixed, but this is not wholly so. Authorization does not necessarily involve compulsory use ; the Minister of Education may de authorize a book at any time upon notice ; the book may not find favor with teachers and scholars; a newer and better book may be authorized ; the sale may not continue as large after the first or second year owing to the book being of good lasting quality and going from child to child, and in view of all this if the publisher pays out a lump sum to the author he must at the outset fix a larger price on the book so as to be reasonably and quickly recouped, than if he only undertakes to hand over a royalty on all books actually sold, not to include those given away to promote sales, and also exclusive of unsold stock. This is the result of the unanimous testimony of authors and publishers and appears clear upon a thoughtful consideration of the question.

The publishers also contend that good authors, such as have prepared the great majority of text books now in use in Ontario, will not be satisfied with small compensations by way of a lump sum ; they will figure out the value of their work by a computation of the probable results of a royalty and each author having unbounded confidence in the success of his book will demand a higher sum than the publisher could pay in view of the risk to be run, and besides, the publishers contend that to pay a lump sum instead of royalty on all the text books published, would require a larger capital than they could afford to devote to the text book branch of their business.

Where an author is paid by royalty he remains interested in keeping up the success and standard of his book, and will without further charge see to the revision and improvement of the book in its successive editions so as to keep it up-to-date, but if paid by lump sum he or someone else has to be paid for revision or improvement work.

The employment of authors by the day or hour in the preparation of text books met with a decided disapproval from all the authors examined by us and is not favored in any quarters where we made enquiry and is not practised to any extent. We are of the opinion that it would be prejudicial to the interests of authorship and the public, tending to impair the literary character and quality of the text books and turning earnest and ambitious authors into mere literary hacks. Writers of standing, qualified to prepare text books such as should be used in our schools, would at any rate refuse to be put in this position or accept a such amount of remuneration as would increase the price of books beyond that now fixed under the royalty system.

The royalty paid does not exceed ten per cent. on price of each book sold except in one or two cases where fifteen per cent. is paid, there being in these cases two authors employed on the work and great care and much revision being required in getting up work and preparing it for the press.

The royalty of ten per cent. appears to us to be reasonable and fair to the authors and in no case do we find that an author has received an excessive

amount for his work on the text books of this Province. In the United States where the circulation of text books is very much greater, the authors though being paid only ten per cent. realize much larger returns from the greater sales.

In the lower priced text books, especially those below fifty cents, the royalty does not influence the price of the book, and in the higher priced ones in many instances the royalty is not included to its full extent in the price of the book, because doing so would make the price an odd number of cents.

The method of payment to the author and the amount he receives for his work is a matter of arrangement between the author and publisher, each looking out for himself. The Department of Education does not interfere between them; the publisher makes the best bargain he can as to royalty and brings a speciman book to the Minister of Education, who if satisfied with the merit of the book, fixes the price he is willing to have it authorized at, and if the publisher agrees the book may be authorized. This system, in our opinion, has worked admirably so far, and the investigation by us into the prices, at which the text books used in the Public and High Schools are sold, has satisfied us that the children and young people of Ontario have in use an admirable selection of text books obtainable by them as cheaply as school books can be obtained in England or the United States, and in many instances at much less cost.

It being our opinion that the system of royalty is the best as between publisher and author, and that it does not increase, but tends to diminish the retail price of text books, we are decidedly of the opinion that the same reasons apply to the Government, and that it would not be in the public interest for the Department of Education hereafter to make arrangements with authors for payment to them of a lump sum for the copyright of any text book instead of including in the price of the book a reasonable percentage for royalty and leaving the author to receive his compensation from the sale price of the book.

The educationists of this Province, possessing the necessary literary ability and a knowledge of our educational system and the needs of our schools, are better qualified than authors in any other country to produce suitable text books and to embody in them Canadian ideals. The development of a Canadian text book literature is a wise and judicious policy, which has been steadily pursued by the Education Department for many years with the result that the youth of our schools have in their hands text books of certainly equal literary merit with and greater adaptability to our school needs, because more Canadian in tone, than text book literature of outside authorship; an additional advantage being that the large sum in royalties which was annually paid by the publishers to American and English authors is now kept at home, being paid to Canadians and assisting in the development of Canadian authorship and the building up of our own nationality.

Upon the third enquiry called by the Commission we have made investigation as to the text books used in the other Provinces and in the United States, and the prices thereof, and we find that the uniform excellence of the Ontario text books is such, that many of them after authorization here have been authorized in the other Provinces and are sold there by Ontario publishers for use in the Public and High Schools at the Ontario retail prices.

The following are Ontario text books used in the various other Provinces:

Manitoba:

Ontario Public School Readers (for part use).

Public School Arithmetic.

Public School Geography.
Public School Grammar.
History of the Dominion of Canada, Clement (for 5th form).
High School Composition from Models.
High School Geography.
High School History of England and Canada.
High School Arithmetic.
High School Algebra.
First Latin Book.
High School Physical Science Part I., Part II.
High School Bookkeeping.

North West Territories :

Ontario Public School Readers (for part use).
Public School Arithmetic.
Public School Geography.
Public School Grammar.
History of the Dominion of Canada, Clement (for 5th form).
Public School Drawing Course.

(*French-English Readers*:)

First Reader, Part I.
First Reader, Part II.
Second Reader.
Third Reader.

High School Reader.
High School English Grammar.
High School Geography.
High School History of England and Canada.
High School Arithmetic.
High School Euclid (Books 1, 2 and 3).
High School Book-keeping.

British Columbia :—

Public School History of England and Canada.
History of the Dominion of Canada, Clement (for 5th form).
Public School Physiology and Temperance.
High School Composition from Models.
High School Physical Science, Part I. and II.
High School Book-keeping.

New Brunswick :—

History of the Dominion of Canada, Clement (for 5th form).
Public School Drawing Course.

(*French-English Readers.*)
First Reader, Part I.
First Reader, Part II.
Second Reader.
Third Reader.
Primary Latin Book.

Quebec :

History of the Dominion of Canada, Clement (for 5th form).
Public School Drawing Course.
Public School Physiology and Temperance.
High School History of England and Canada.
High School Beginner's Greek Book.
High School German Grammar.
High School Book-keeping.

Nova Scotia :

Public School Drawing Course.

As to the text books used in the United States and the prices paid therefore, our enquiries have led irresistibly to the conclusion that under the system pursued by the Department of Education in Ontario, the public here obtain school books of equal educational and literary merit and excellence in make up as those of the United States at much cheaper rates; to quote from the report of the arbitrators dated 27th May, 1889, upon an examination into the price of texts books, the Department "has exercised extreme care in dealing with each book as to the retail price thereof so that the public have obtained the books at lower prices than could have been obtained under any other system than the system of authorization now adopted."

A personal inspection of text books used in American Public Schools and a comparison of the prices paid therefor, shews as follows :—

Readers :

Swinton's	6 books containing	1953 pages	.....	$3 66
Barnes'	5 " "	1374	.....	2 65
Monroe's	6 " "	1328	.....	2 57
Ontario Pub. School	6 " "	1477	.....	1 65

Grammar :

Brown's	2 books containing	500 pages	.....	$1 16
Hyde's	4 " "	919	.....	1 95
Reed & Kellogg's	2 " "	601	.....	1 01
Ontario Pub, Sch.	1 " "	190	.....	25

Arithmetic :

Milne's	2 books containing	699 pages	.....	$ 95
Wentworth's	3 " "	900	.....	1 95
Brooke's	4 " "	1288	.....	2 61
Ontario Pub. Sch.	1 " "	210	.....	25

Geography:			
Frye's	2 books containing	335 pages	$1 85
Barnes'	2 " "	237	1 80
Warren's	3 " "	365	2 97
Ontario Pub. Sch.	1 " "	164	75
History:			
Montgomery's	2 books containing	679 pages	$1 60
Meyer's	1 " "	759	1 50
Fiske's	1 " "	553	1 00
Ontario Pub. Sch.	2 " "	623	80
Temperance and Hygiene:			
Pathfinder	3 books containing	733 pages	$1 80
Hutchins'	1 " "	371	1 10
Walker's	1 " "	415	1 20
Ontario Pub. Sch.	1 " "	196	25
Drawing:			
White's	9 books containing	288 pages	$1 05
Ontario Pub. Sch.	6 " "	144	30
Writing:			
Merrill's	6 books containing	144 pages	$0 48
Spencer's	12 " "	288	84
Ontario Pub. Sch.	6 " "	152	45

Comparison of cost of text books of Public Schools of New York with the cost of those in Public Schools in Ontario:

	New York.	Ontario.
Readers	$2 57	$1 65
Algebra and Euclid	....	25
Geography	1 80	75
Grammar	1 01	25
History	1 00	80
Drawing	1 05	30
Physiology and Temperance	1 10	25
Writing	48	45
Arithmetic	95	25
Lowest cost	$9 96	$4 95

It appears to us that the High School and Public School Geographies having now being authorized and in use for ten years might with advantage be revised and modernized somewhat on the lines of Frye's Geographies published in Boston, the price of which is $1.85 for two books as against 75cts. for our Public School Geography.

In closing our report we may properly notice that the contracts with the Government under which the various school books are published, contain certain provisions entitling the Department of Education to make arrangements with other publishers on similar terms for publication of the same books, so that there

cannot be a monoply, in fact some of these books are published under those agreements by more than one publisher, but competition has not reduced price, showing that original price was not excessive. Great care has also been taken to provide that the material used, and workmanship employed in the manufacture of each book shall be of excellent quality and kind, and we have much pleasure in reporting that the publishers have lived up to their contracts in that respect, and that the various books published by them are excellent as to paper, printing and binding, very durable and of very attractive exterior.

All of which is respectfully submitted :

EWD. MORGAN,
JAMES BAIN, Jr.,
C. BLACKETT ROBINSON.

Toronto,
10th January, 1898.

NUMBER OF MEETINGS AND NAMES OF WITNESSES EXAMINED:—

In connection with the Commission twenty-one meetings were held and the following witnesses examined:

As to cost of text books:—

H. L. Thompson.
A. W. Thomas.
A. E. Whinton. } of the Copp, Clark, Co.

S. G. Beatty.
Henry P. Carson. } of the Canada Publishing Co.

Dr. Briggs.
Robert Milne.
Richard Whittaker } of the Methodist Book and Publishing Co.

W. P. Gundy.
W. D. Jones. } of W. J. Gage & Co.

Dan. A. Rose, of Hunter Rose & Co.
H. M. Wilkinson, of the Education Department.
John R. Barber of Barber, Ellis & Co., Limited, and Barber Bros.
Alexander Buntin, of Valleyfield Paper Mills.
W. Crichton, of Buntin, Reid & Co.
George Thomas, Assistant Queen's Printer.
Robert Brown, of Brown Bros., Limited.
T. G. Wilson, of Munro, Cassidy & Co.
Robert G. McLean, of R. G. McLean & Co.
James Murray, of the Murray Ptg. Co.

As to Royalties:—

H. L. Thompson, of the Copp, Clark, Co.
S. G. Beatty, of the Canada Publishing Co.
Dr Briggs, of the Methodist Book and Publishing Co.
W. P. Gundy, of W. J. Gage & Co.
G. N. Morang, of D. Appleton & Co.
Professor Alexander, of Toronto University.
" Clark, of Trinity "
" Reynar, of Victoria "
Chancellor Wallace, of McMaster "
Principal Kirkland.

As to Literary Quality of Text Books:—

Professor Alexander, of Toronto University
" Clark, of Trinity "
" Reynar, of Victoria "
Chancellor Wallace, of McMaster "

RETURN

To an Order passed by the Legislative Assembly, on the 24th day of March, 1897, for a retnrn showing cost of, or purchase money paid for The Ontario Agricultural College; acreage of property, together with the amount of land now under cultivation; expenditure thereon, since its establishment, upon buildings, stock, fencing drainage, and all other accounts. Together with receipts from students in fees, sale of stock, produce and other sources.

E. J. DAVIS,
Secretary.

Proaincial Secretary's Office,
Toronto, 14th January. 1898.

RETURN

Showing the amount of purchase money paid for the Ontario Agricultural College; acreage of the property; amount of land under cultivation; expenditure thereon since its establishment, together with receipts in fees, sale of stock, produce and other sources:

The original purchase of land and buildings for the purposes of the Ontario Agricultural College, Guelph, was made from Mr. F. W. Stone. The amount of purchase money paid was $75,043.20, as follows:

September 24, 1873	$74,500.00
July 30, 1874, balance purchase money, $500; interest and taxes, $43.20	543.20
	$75,043.20

The land in connection with the Institution consists of 550 acres, divided as follows: About forty acres still uncleared; sixty-three acres in lawn, garden, arboretum, nursery and forest tree plantations; fifty acres in experimental plots; ten acres in lanes, roads, etc., and three hundred and eighty-three acres worked as an ordinary farm.

For the twenty-four years from 1873 to 1896, inclusive, the total expenditure chargeable to capital account, for land, buildings, improvements and equipment, including reconstruction after three fires, was $489,856. The total amount for the same time for salaries, expenses, maintenance and repairs in all departments of the College and farm was $828,105. The revenue for seventeen years, beginning with 1880, when fees were first charged, was $279,760 from all sources. The public accounts include along with the charge upon College and farm the statements for "travelling dairies" and "Dairy School at Guelph." The expenses of these are not included in the preceding statements. The travelling dairies for the seven years, 1891 to 1896 inclusive, cost $18,291. The Dairy School for the four years 1893 to 1896, cost $13,395. The revenue of the Dairy School for the same time was $10,125.

RETURN

Of copies of all Correspondence or Reports in the possession of the Government respecting the operations of the Engledue Syndicate during the past season on the locations or concessions granted at the beginning of the year.

1. Relations of J. K. Kerr, Q. C., to the Syndicate.

Toronto, Nov. 26th, 1897.

Dear Sir,—I beg to acknowledge your favour of the 24th inst.

There is no truth in the statement that when I became interested in the Engledue concession, or in the application of Col. Engledue for a special concession, the Government changed their policy with reference to the same.

The fact is, that prior to my visit to England, the Government was favourably disposed towards the proposal, although the Government had not put the matter in the form in which it was acceptable to the English investing public.

It was on this account that I was consulted when in England by Col. Engledue and Mr. Reid, and I was requested to point out to the Government the advisability of having the proposal placed in a form that would be calculated to inspire the confidence of the English investing public.

Accordingly, in my representative capacity, I brought the matter before the Government, and endeavored to show the Government the importance of the proposal, with a view of the development of our mineral district, and at the same time the importance of having the arrangements or proposals in a form that would be acceptable to the investing public.

As is correctly stated by you, it was not until after the arrangement had been made and completed that Col. Engledue specially asked you whether there would be any objection to my name being in the concession or license of occupation, with the object of the trustees being able to show the English public that they would be, as they believed, well represented in this country until they could organize a company and take over the proposal.

Subsequently, upon the company being organized to take over the proposal, I assigned to the company all the interest which I had in the license of occupation and rights thereunder; and I may add that I do not hold and never have held any shares in the company which has taken over and is operating the license of occupation, nor has the company been nor is it in any way indebted to me in respect of the same, except for some trifling professional charges payable to my firm.

Yours truly,

J. K. KERR.

The Hon. J. M. Gibson,

Commissioner of Crown Lands, Toronto.

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2. Memorandum by the Director of the Bureau of Mines respecting the Selection of Lands for the Engledue Syndicate.

Respecting the negotiations which resulted in the agreement between the Commissioner of Crown Lands and the syndicate represented by Colonel W. T. Engledue, I have full knowledge from inception to close.

I am the officer of the Government to whom the first approach was made by Colonel Engledue for a concession of land which his syndicate might explore and develop.

When I reported the project to the Commissioner, I was authorized to continue the negotiations and try to frame a workable plan.

All, or nearly all, the letters addressed to Colonel Engledue were drafted by me after consultation with the Commissioner.

And when the negotiations were sufficiently advanced, I was requested both by the Commissioner and Colonel Engledue to select a tract of land suitable for a concession. I considered the matter carefully, and adopted for my guidance these general conditions:

1. That having in view the public interest, the concession should consist of two tracts of small area in different parts of the country, instead of one tract of larger extent.

2. That the tracts should be in unexplored territory.

3. That as far as practicable they should possess natural boundaries.

4. That in their geological formations they should appear to be favorable to the occurrence of metalliferous veins.

Two tracts were selected accordingly—what is known as the Block "A" on the Bureau of Mines map of Seine River and Rainy Lake, and the Block "B" on the Geological Survey map of the northern part of Lake of the Woods.

Not having visited either of the locations, I had to depend on the maps for the rock formations, which are shown to be Laurentian, Huronian and eruptive granite.

At that time no letters had been filed in the Department for mining locations in the first named tract, and only a few (two or three, as I remember) in the other; therefore the lands were assumed to be unexplored.

I explained to Colonel Engledue the grounds on which I had proceeded to make the selection, and he expressed himself satisfied. He informed me that he had no knowledge whatever of any portion of the country excepting in the locality of the Mikado mine, which is distant several miles from the nearest point of Block "B" and a hundred miles from Block "A." He did not at any time express to me preference for a concession in one locality or another; nor did any person on his behalf.

The choice was my own absolutely, except in so far as I consulted Mr. Aubrey White, Assistant Commissioner, Mr. Thomas W. Gibson, Secretary of the Bureau, and Mr. George B. Kirkpatrick, Director of Surveys.

A. BLUE.

6th December, 1897.

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3. Memo. for the Commissioner of Crown Lands.

Referring to the notice of motion by Mr. Dickenson, M.P.P., for an order of the House for a return of copies of all correspondence or reports in the possession of the Government respecting the operations of the Engledue Syndicate during the past season on the locations or concessions granted at the beginning of the year, I have to say that on 1st December inst. I addressed a letter of enquiry to Thomas Deacon, C.E., O.L.S., of Rat Portage, of which the following is a copy:

"DEAR SIR: I write at the request of the Commissioner of Crown Lands to "make a few inquiries relative to the work carried on by you on tract B as de- "scribed in the License of Occupation granted to Colonel Engledue of England "and by him transferred to the Ontario Government Gold Concessions, Limited. "Occasional reference has been made in the newspapers to the progress of "explorations under your management; but it would be more satisfactory to pro- "cure some account of the work done directly from yourself as far as you may "be at liberty to furnish it. Information under the following heads would be "instructive and valuable:

"1. When exploration work began, and how long it has been carried on.

"2. Average number of men employed, and, if divided into parties, the num- "ber of men in each.

"3. Plan of exploration. If lines have been run across the tract, say how "many, at what distance from each other, and how far they have been explored.

"4. Number of mineral veins discovered, their size, length, etc., the class, "character and apparent value of the ores, and the extent to which the veins have "been prospected by stripping, cross-cutting and sinking of pits and shafts."

Mr. Deacon's report was made under date of 6th December, and is as follows:

ONTARIO GOVERNMENT GOLD CONCESSIONS LIMITED.—BLOCK B.

RAT PORTAGE, CANADA, DECEMBER, 6th, 1897.

A. BLUE, ESQ.,
Director of Mines, Toronto.

DEAR SIR,—Your favor of the 1st inst. was received by me upon my return from Block "B" on Shoal Lake, where I have been inspecting the work of development now going on there.

With reference to your request for definite information regarding the work done by this Company, I may say that Mr. Jas. Reid and Mr. W. J. Peake-Mason, of London, Eng., arrived here about the middle of July and engaged me to under- take the work of exploration and development of Block B Ample funds were provided in cash to commence the work, and placed to my credit in the Imperial Bank here; and on the 24th of July I commenced work with a force of about twenty men, which I subsequently increased to twenty-five, and maintained this force solely in the work of exploration alone, that is, in looking for veins or bodies of ore, doing some surface stripping of earth and putting in a few shots, until stopped by snow some three weeks ago.

I began by first carefully surveying the whole area into blocks of 160 acres or thereabouts, about the same as an ordinary township survey—that is, lines running east and west at distances of one mile apart, while the lines running north and south were run every twenty chains apart, making the blocks twenty by eighty chains. These lines were actually run on the ground and well and clearly marked. About sixty-four miles of line was run in all.

The sections and ranges being numbered, I then divided my men into groups of two each, equipped them with all necessary tools, and assigned to each two a section at a time. They began at the south side of their respective sections, and taking a strip, say 300 feet wide, carefully examined it across the narrow way of the section, that is from east to west, blazing numerous trees as evidence that they had been over all the ground and to prevent going over the same ground twice.

Although funds were provided for a larger party, still I found that too much expense and lost time would ensue by scattering over too large an area, where we had to make all our own roads and to get in provisions, etc.

I succeeded in getting over about one-half of the main body of the concession, and will resume exploring as soon as spring opens. At present work is being carried on upon several of the veins discovered in the fall, and I have two contracts let for shafts with night and day gangs in each, and they are down about forty feet.

A number of veins, probably twenty-five or thirty, were found, and about twenty-two test pits of various depths were sunk to test them, some of them proving worthless and some of them being left for development during the winter. These are now being worked, and work will continue on them all winter, and it is probable that a diamond drill will also be put to work shortly.

The Company have expended a large amount of money in a careful, systematic exploration of the tract, and deserve only praise and encouragement for their work. In fact, no one here, no matter what their political beliefs may be, has anything but praise and good wishes for the Company. They have promptly met all their bills and carried out their work in a liberal manner.

It has been said that they were in possession of secret information as to the value of these lands prior to their receiving their license of occupation. If such was the case, they have not yet deemed it expedient to reveal to me as their manager where these hidden treasures are, though I have expended nearly $10,000 of their own money looking for them. The statement is absurd, and as manager of the Company I have no hesitation in saying that it would not be made by any responsible man having any knowledge of the circumstances.

My instructions were very brief, and were simply to adopt what scheme my experience and judgment would suggest, and to keep a record for the Company's use of what I did. No reference was made to any particular part of the location, nor was I advised to commence at any particular place, nor given any suggestions whatever as to which parts would prove the most profitable. I was simply instructed to explore the concession, and I am still engaged in that work. While some veins that promise well under development have been discovered, no sensational finds have been made as yet, but the work of development will be pushed, and the ores thoroughly tested.

Yours respectfully,

THOS. R. DEACON.

A letter of enquiry similar in its terms to the one addressed to Mr. Deacon was sent on the same date to Mr. Alan Sullivan, C.E., who has had charge of the explorations on Block A, but, owing to his own serious illness and to illness in his family, a written report has not been received from him until this morning. Following is a copy of it:

THE ONTARIO GOVERNMENT GOLD CONCESSIONS, LIMITED, OF LONDON, ENGLAND.—BLOCK A.

RAT PORTAGE, ONT., January 7th, 1898.

A. BLUE, Esq.,
Director Bureau of Mines, Toronto.

DEAR SIR,—In answer to your enquiry of December 1st last as to the workings of Block A of the Ontario Government Gold Concessions Company, I beg to report as follows:

1. Exploration work began during the last week in July and continued till November 21st, when those employed were paid off for the season—actual cash thus expended being about $7,500.

2. The average number under engagement was between thirty and thirty-five. This number included two independent mining crews of four men each, and two or three Indians to cut trails, do portaging, and bring in supplies, the remainder being prospectors proper and a small survey party.

3. The method of exploration is briefly as follows: I first go over the ground myself, making a rough reconnaissance of its topography and geological features, getting enough original information to direct in general the operations of the survey party who follow immediately after. The ground is then subdivided into blocks of 20x40 chains, giving an area of 80 acres in a block. In the case of points and islands they are generally considered as blocks, if not of too great an area. The survey lines are blazed and posted and the posts numbered, the survey crew doing preliminary prospecting as they proceed along their lines. The prospectors make up parties of two, each party being numbered and entirely independent in its work from any other, and as a rule a party proceeds block by block till distance necessitates a change of camp.

The ridges are first carefully explored and followed to block boundaries, then the low lying ground, the moss being removed wherever possible in a strip across the strike of the country rock. If the character of the rock is promising, two, or even more, parties are put on the block together, and in all cases prospectors are under standing orders to exhaust every possible means of ascertaining whether a quartz deposit exists or not.

A vein having been discovered, it is partially stripped by the prospectors, who also determine its strike, width and surface continuity, and samples are brought into camp for preliminary tests. I then inspect personally, and decide what further operations, if any, are advisable. Should it be decided to put in a test pit, the Indians cut a trail and the miners take in their tools and start work at once.

In general, the geological features of Block A are somewhat different from those I had expected. The large wedge of schist marked on the geological map does not exist in the interior, which appears to have been absolutely unexplored, either by white man or Indian, but instead, it (the interior) is bounded by bands of what appears to be a biotite schist, and this gradually merges into the mica granite which is observable almost everywhere along the shore.

The mining to date has consisted solely of test pits; about twelve of these have been sunk, varying from 10 to 12 feet in depth.

While we have not yet found anything to be unhesitatingly recommended as a first rate deposit, there are two or three large fahlbands or dikes carrying

gold in small proportion which the Company will probably test by diamond drill next season.

In conclusion I may say that this part of the Company's land is being examined as carefully and closely as it is possible to do it; neither time, labor nor money are being spared to determine its resources; my explicit instructions are to examine everything and examine it thoroughly. Those employed are all Canadians, and the methods used are as much ahead of those of the ordinary prospector as a minute investigation is ahead of a cursory glance.

I shall be glad to welcome your Inspector to the scene of our operations next summer.

Yours faithfully,

ALAN SULLIVAN,
Manager of Block A.

No report upon the explorations carried on by the two parties employed by the Company has yet been made to me by the Inspector of Mines for Western Ontario.

A. BLUE,
Director Bureau of Mines.

January 10, 1898.

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Fees and Emoluments received by the Registrars of Deeds for the Province of Ontario for the year 1897, made in accordance with the provisions of 56 Vic. cap. 21 secs. 117, 120 and 121, and 57 V. c. 9, secs. 6 and 7, with which are contrasted the amount of Fees, surplus to municipalities and Registrars' incomes, for the years 1896 and 1895

SCHEDULE A

SCHEDULE B

| No. | Name of registry office | Name of Registrar | Number of instruments registered in 1897 | Fees thereon | Number of instruments registered in 1896 | Fees thereon | Number of instruments registered in 1895 | Fees thereon | Discharges of mortgages registered in 1897 | Fees thereon | Wills registered | Fees thereon | Leases registered | Fees thereon | Assignments of leases registered | Fees thereon | Agreements registered | Fees thereon | Miscellaneous items registered | Fees thereon | Total fees received for registration of instruments | Fees paid to Registrar for services rendered | Fees received for searches | Fees received for office copies | Fees received for certificates | Fees received for postages | Fees received for miscellaneous services | Total fees received by Registrar | Amount of salary | Office rent | Clerk hire | Stationery | Postages | Miscellaneous expenses | Total expenses | Net surplus or deficiency | Fees paid to Treasurer of Province | Fees paid to Treasurer of Province | Fees paid to Treasurer of Province | Fees paid to Treasurer of Province | Fees paid to Treasurer of Province | Fees paid to Treasurer of Province | Total fees paid to Treasurer of Province

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